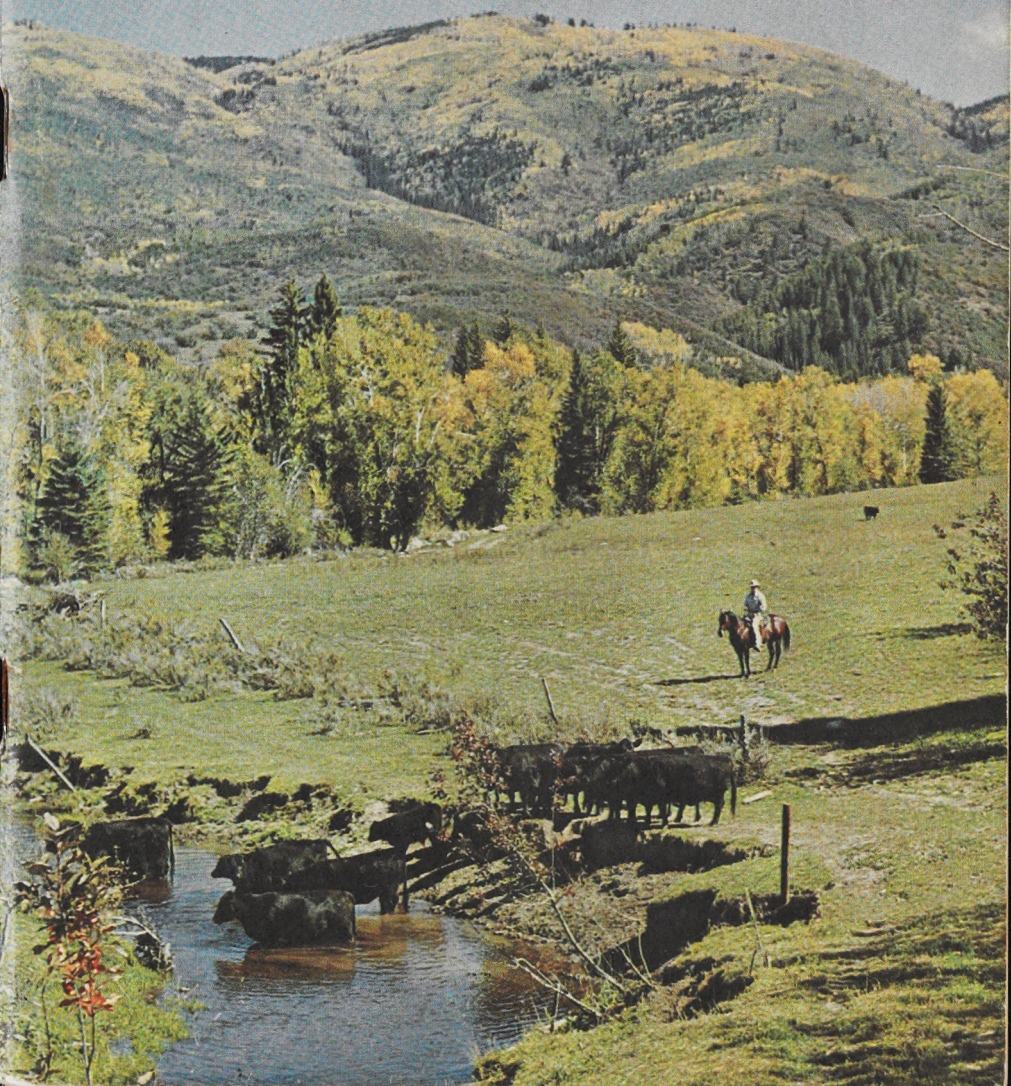


Franklin

VACCINES AND SUPPLIES
for Livestock



Franklin Vaccines, Medicines,

Insecticides, Instruments and Appliances for Livestock

AMERICA'S LEADING BRAND OF BLACKLEG—MALIGNANT EDEMA BACTERINS

FRANKLIN — THE STOCKMAN'S COMPANY

The O. M. Franklin Serum Company was founded in 1917 by a group of stockmen and veterinarians to provide cattlemen with their first dependable protection against blackleg, as originated by Dr. O. M. Franklin.

The Franklin brand name, starting with one outstanding product, has since been added to many quality items. Each new product added to the line is carefully studied to be certain that it has the quality required to become a Franklin product. Over the years, the Franklin brand has become associated with fine biologicals, pharmaceuticals, insecticides, treatments, show and breeder supplies, and instruments.

Franklin has steadily increased its facilities to provide better service to Canada's stockmen. The headquarters office and warehouse are located at Calgary, Alberta, with five additional warehouse depots located at strategic points to supply the Franklin dealer in your immediate area.

The initial purpose of the Franklin company—to supply stockmen with a dependable protection against blackleg—is still paramount in the Franklin organization. Each member of this organization is sincere in his desire to provide good service to stockmen with high-quality products bearing the Franklin brand.



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CATALOG NO. 65

Practical Helps for Preventing Livestock Losses

EXPERIENCE has proven that certain practices greatly reduce the risk of loss in handling livestock. In this catalog is shown a wide variety of products needed in such practices.

Every effort is made to merit the continued confidence and patronage of our many friends in the livestock industry. Our constant aim is to supply dependable products of high standard quality at the lowest consistent prices and with prompt and courteous service.

You may rely implicitly upon any merchandise ordered from our catalog. If it is not satisfactory, you are at liberty to return it. Feel free to write us for items you may need that are not listed.

ALL deliveries are subject to availability of stock and all prices are subject to change without notice.

Franklin products are on sale at Drug Store Agencies in practically every trading center throughout the livestock-raising areas of Western Canada, as well as many points in Ontario.

Sales Tax extra where required by Provincial Law.

NOTICE

PRICES: All vaccines, antibiotics, injectable vitamin A, injectable iron, and mastitis ointments listed are prepaid unless otherwise specified. All other merchandise is priced f.o.b. Calgary unless otherwise specified.



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O. M. FRANKLIN SERUM CO., LTD.

P.O. Box 428

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USE OF BIOLOGICS

Biologics have become an increasingly important factor in the prevention of animal disease. Their widespread use has eliminated many formerly devastating diseases of livestock from the hazards of stock-raising. Despite the advent of many new pharmaceuticals that have proven effective in treatment of livestock disease, prevention of disease still remains the most effective and economical method of control. One authority paraphrases the old saying thusly, "A cubic centimeter of prevention is worth a liter of cure."

In order to obtain full value from the use of biologics, one should understand how they act and what may be expected from them. They are only tools for the prevention and treatment of disease, and should be used as such. The careless use of biologics, without an understanding of their use, may lead to disappointment and economic loss.

Immunity

Immunity may be defined as a condition in which an individual, or species of animal, exhibits unusual or complete resistance to an infection for which other individuals or species show a greater degree of susceptibility. Immunity, as such, is a relative term and depends on many factors. It may be natural or acquired. Natural immunity is that immunity one species of animal may have toward disease that affects other species, and may be illustrated by the immunity that other species have to infection from hog cholera. Acquired immunity may be developed in several ways and may be either active or passive.

Active immunity may be produced by natural causes (recovery from a natural case of the disease), or induced by the injection of immunological agents, which stimulate production of anti-bodies within the animal's system. These agents are generally classified as:

1. Vaccines, containing viable bacterial and/or viral particles which have been attenuated by various methods and thus made non-lethal for the species in which they are intended for use. The term "vaccine" is

also sometimes applied to immunizing agents containing viral particles which have been inactivated.

2. Bacterins, containing bacterial particles which have been inactivated by various physical or chemical means.

3. Toxoids, containing material produced by the growth of certain bacteria, which material is antigenic but yet has been rendered non-lethal or non-poisonous by chemical means.

Passive immunity is resistance to disease which is conferred on an animal by an outside agent, the animal itself playing no part in the development of the resistance. The antibodies or antitoxins are supplied by the biological product itself. Anti-serums (anti-hog cholera serum, anti-hemorrhagic

septicemia serum, etc.) and antitoxins (tetanus antitoxin) supply such passive immunity, which is of short duration. Anti-serums are chiefly employed during an outbreak of disease or shortly before exposure to disease, to provide a quick resistance.



When to Vaccinate

The time of vaccination to produce an active immunity is of the utmost importance. Generally speaking, it takes from five to seven days, following vaccination, before antibodies appear in the blood. It may take two weeks or longer before the maximum response is reached. Thus, in diseases such as hemorrhagic septicemia, the animal should be vaccinated two weeks, or more, before shipping or weaning to provide a strong response to the bacterin. The use of an initial normal dose, followed by a second dose, three to five days later, seems to increase the resistance. This is the preferred method of use for bacterins to develop a quicker and stronger resistance to disease, when the use of anti-serums may be impractical. The procedure is particularly adaptable in the use of mixed bacterins for increasing resistance to non-specific infections.

The "Booster Shot"

After the maximum response has been reached, the degree of resistance may gradually recede, depending upon the type of

disease and the agent used. In the case of some diseases in some species, resistance may last for a relatively long time, while in others it is usually of comparatively short duration. In all cases, and for every individual animal, however, it must be remembered that active immunity is a relative thing. Active immunity depends entirely on the ability of each individual animal to develop its own resistance to disease in response to the antigenic stimulus used.

A "booster shot" may be employed to bring the response back to a high level. When a "booster shot" is employed, antibody production usually occurs very promptly, often beginning within hours instead of days. In addition to speeding up the response, the development of anti-bodies may be greater than produced from the initial stimulus, resulting in a greater resistance.

In the use of any biological products, the direction on the label should be followed for best results. Failure to properly follow instructions may be disastrous, particularly in the case of live culture products. For more accurate instructions as to the best time to vaccinate or for more detailed information, refer to the specific biologic—elsewhere in this book. Anaphylactic reaction (shock) may occasionally result from the injection of any biologic. For further information and description of shock, see page 22.

How to Vaccinate

The only instrument necessary is an accurate hypodermic syringe. The size of the dose being used often determines the size of the syringe that will be most practical. We prefer the Franklin 10-RF or 20-RF syringe

for use with the Franklin 2-cc dose, as this type syringe offers accuracy with less frequent filling of the syringe. The Franklin 6-F syringe is ideal for use with 1-cc doses or for administering *Brucella Abortus Vaccine*.

Syringes and needles should be sterilized before use by placing in a pan of water and boiling for 20 minutes. After sterilization place a few drops of glycerin or castor oil on the plunger and end washers to promote smooth operation of the syringe and to aid in avoiding leakage of pressure. Turning the palm rest clockwise causes the rubber plunger packing to expand against the inner surface of the glass barrel so that air or liquid cannot escape past the packings and through the headcap.

Insert the needle through rubber stopper of bacterin bottle, after first wiping the surface of the stopper with rubbing alcohol or other reliable disinfectant. Fill syringe by pulling back on plunger until syringe is full of bacterin and no air bubbles are present. When large bottles of bacterin are used, filling may be facilitated and more positive aseptic precautions exercised by leaving one needle in the stopper and inserting the syringe adaptor into this needle each time

the syringe is filled.

Bacterins should be given subcutaneously (under the skin) after first wiping the needle with a piece of cotton saturated with rubbing alcohol, thus preventing the chance of carrying infectious germs from one animal to another during the vaccinating procedure. Subcutaneous injections are slowly absorbed, thus permitting a longer immunity response to the bacterin. Care should be taken to see that the bacterin does not escape when the needle is withdrawn.



CONTROL OF BLACKLEG AND MALIGNANT EDEMA

Blackleg is a widespread and rapidly fatal disease of young cattle and sheep, caused by a micro-organism known as *Clostridium chauvei*. *Cl. chauvei*, like other *Clostridium* organisms, has two stages (or forms) of life—the vegetative and the spore. The vegetative form is that which grows and which kills the animal. It is easily killed by heat or chemical means, but when exposed to air, it turns into a spore (seed) form. This spore is the dormant stage of the germ and is resistant to heat, cold, and some chemicals, and may remain a source of the disease for years. Disinfection of contaminated premises is impractical, and vaccination is the only reliable method of control of the disease.

Infection from *Cl. chauvei* takes place by ingestion of the organism in the feed or water, or it may enter the system through abrasions of the skin or mucous membranes of the animal. Since blackleg spores may be present, the careful stockman disinfects all tools used in operations on livestock and employs practical aseptic precautions during the operation itself.

When an animal becomes infected with *Cl. chauvei*, the germs multiply rapidly in the system, and death results in one to three days following the first appearances of symptoms.

Symptoms of Blackleg

Usually, the first symptoms noted are stiffness or lameness in the front or hind quarters and a swelling under the skin of these parts (gas formation). As the swelling develops, a crackling sound may be noticed when the hand is run over the swollen area. Other general symptoms may be high fever, difficult breathing, and loss of appetite.

Treatment of Blackleg

Treatment is generally considered of little value, mainly due to the rapid course of the disease. In most cases, animals may be found dead or the course of the disease developed to the point that treatment will have no effect. Immune serum has been used, but

it is not readily available and its use has been largely discontinued.

Penicillin is regarded as being effective in the treatment of Blackleg and Malignant Edema in the early stages.

Recommended dosage: Administer by deep intramuscular injection 5,000 units per pound of body weight of Cr. Procaine Penicillin G in Aqueous Suspension, followed at 12-hour intervals with injections in the same dosage of Cr. Procaine Penicillin G in Oil.

Immunity

Animals that have recovered from an attack of blackleg are immune to infection for the rest of their lives. Very young calves and older cattle seem to have a considerable degree of natural immunity.

Blackleg is one disease that has been brought under control by preventive immunization. Vaccination against blackleg is probably one of the most widely practiced and effective control measures known in veterinary medicine.

Malignant Edema

Malignant Edema is caused by *Clostridium septicum*, an organism very similar in characteristics to the Blackleg organism, *Clostridium chauvei*. Symptoms are so similar to those of Blackleg that it is practically impossible to distinguish between them by field diagnosis. Only by careful laboratory examination is it possible to make a differential diagnosis. The main difference between the two diseases lies in mode of infection. Malignant Edema generally gaining entrance through skin abrasions and Blackleg by ingestion with food and water. Malignant Edema will affect older cattle as well as calves, whereas Blackleg, with almost negligible exceptions, is considered to affect only calves and yearlings. For all practical purposes, the two diseases should be considered as one and appropriate preventive measures taken to provide adequate immunity.



DR. O. M. FRANKLIN'S CONTRIBUTION TO CONTROL OF BLACKLEG

Dr. O. M. Franklin played an important part in bringing about control of blackleg by vaccination. He first developed the famous Kansas Germ-Free Liquid Blackleg Aggressin, providing stockmen with a reliable prophylactic, free from the dangers of previous vaccines.

Next came Franklin Blackleg Bacterin, so new and original that patents were issued to Dr. Franklin. Franklin Blackleg Bacterin, introduced in 1923 after years of laboratory and field experiments, has had a record of dependable lifetime immunity so nearly perfect that we know of no biological product that has matched it. Since its introduction, millions of calves have been immunized against blackleg.

Franklin Blackleg Bacterin was designed to develop the strongest possible immunity, and to provide greatest convenience for the user. To accomplish each purpose, the major immunizing elements of more than 10 cc. of whole culture blackleg bacterin were contained in a 1-cc dose (ordinarily administered in a 5-cc dose). This, in fact, made Franklin's a "double-strength" bacterin. An additional advantage resulted from this modern technique — accuracy in administration, for the smaller dose made possible the use of a smaller and more accurate syringe. This combination of potency, accuracy, and convenience was responsible for the popularity of Franklin Blackleg Bacterin over a long period of years, and for the continued high esteem in which Franklin blackleg products are held today. Franklin's ever-improving techniques for growing blackleg cultures are reflected in products of unsurpassed quality.

In 1941, Dr. Franklin introduced Franklin Clostridium Chauvei-Septicum Bacterin to protect calves against both Blackleg and Malignant Edema. His close contact with the livestock industry made him aware of the urgent need for this double protection. The outstanding record of Franklin Blackleg Bacterin in preventing Blackleg losses caused a more thorough diagnosis in the death from blackleg-like diseases of calves previously vaccinated with Blackleg Bacterin. This resulted in positive diagnosis of many cases of Malignant Edema caused by the Clostridium septicum organism. Such losses became sufficiently numerous to require the need for this double protection.

Malignant Edema has been diagnosed in almost every section of the country. The use of Cl. Chauvei-Septicum Bacterin has largely supplanted the use of straight Blackleg bacterins.

Each Franklin Blackleg prophylactic has been designed with one purpose in mind: To protect calves, and to protect them with the greatest convenience and economy to the owner. Franklin has never cheapened its quality in a scramble for cut-price business, feeling that the very best protection is the more economical in the long-run. It has been this policy — of selling protection — combined with experience of more than 40 years of producing quality blackleg vaccines and an outstanding record of protection of well over 155 million calves, which has kept the Franklin brand in its position of dominant leadership.

Each year, more calves are protected from Blackleg and Malignant Edema with Franklin than with any other brand.



Dr. Franklin

Advantages of the Franklin Small Dose

The Franklin "small" dose was carefully planned to provide maximum immunizing elements in a minimum of liquid. Mere bulk means little in evaluating the efficacy of a bacterin—it is the concentration of essential immunizing elements that counts. A smaller, more accurate syringe may be used, providing for accuracy in administration as well as less frequent filling of the syringe—a definite convenience to the user—and there is less chance of the bacterin leaking from the site of injection. The actual test of any biological is the results obtained from its use—FRANKLIN BACTERINS HAVE PASSED THAT TEST FOR YEARS WITH UNSURPASSED RESULTS.

FRANKLIN BACTERINS FOR THE CONTROL OF BLACKLEG AND MALIGNANT EDEMA

To insure the best protection possible against Blackleg and Malignant Edema, calves should be vaccinated early, prior to the season of expected losses. Generally, calves are vaccinated at the time of branding, dehorning, or castration to take advantage of one handling of the herd. On some badly infected ranges where losses have been experienced prior to this work, or shortly following castration or dehorning, it is advisable to vaccinate earlier, or not less than two weeks prior to such operations.


Generally, it is not necessary to revaccinate calves near weaning time, except possibly in cases where they may have been vaccinated at a very early age. Some very young calves may not be capable of developing a sufficiently strong immunity to carry them through the entire period of susceptibility. In such cases, particularly on badly infected ranges, it is advisable to revaccinate at weaning time.

Franklin Bacterins, for protection against Blackleg and Malignant Edema, have been used for years with confidence by stockmen who desire the best protection possible for their calves. **More calves are protected each year, from Blackleg and Malignant Edema, with Franklin than with any other brand.**

CCS BACTERIN

(Cl. Chauvei-Septicum)

Recommended for the vaccination of healthy cattle, sheep, and goats against **Blackleg** (Cl. chauvei) and **Malignant Edema** (Cl. septicum). The prevalence of Malignant Edema on many ranges is well recognized, making this bacterin the product of choice to protect against both infections.



The resistance to Blackleg, developed by animals following vaccination with CCS (Cl. Chauvei-Septicum) Bacterin, usually persists through the susceptible period of the animal's life.

Duration of resistance to Malignant Edema has not been definitely established. Our field experience since 1941 indicates that animals vaccinated as calves receive a practical degree of protection through the yearling age. Unlike Blackleg, Malignant Edema may, in some areas, affect older cattle; so, if indicated by previous experience, revaccination should be employed to avoid loss.

Dosage: For cattle, 2 cc. For sheep or goats, 1 cc. Inject under the skin, using aseptic precautions.

Each dose contains full immunizing properties to protect against Blackleg and Malignant Edema.


Prices: 5-dose vial, **85c**; 10-dose vial, **\$1.50**; 25-dose vial, **\$3.63**; 50-dose vial, **\$7.00**. Quantity prices on request.

Also available in the 5-cc dose for those who prefer a less-concentrated product.

TRIPLE BACTERIN

(Cl. Chauvei-Septicum Pasteurella)

Recommended for the vaccination of healthy cattle, sheep, and goats for protection against **Blackleg** (Cl. chauvei), **Malignant Edema** (Cl. septicum), and **Hemorrhagic Septicemia** (Pasteurella multocida).



To be preferred for use when it is desired to protect against the three infections named above with a single vaccination.

The duration of resistance to Blackleg and Malignant Edema which may be expected from the use of this product is the same as that obtained from the use of Franklin CCS (Cl. Chauvei-Septicum) Bacterin.

Seasonal immunity (of approximately five or six months duration) against Hemorrhagic Septicemia (pasteurellosis) may be expected from the use of this bacterin. This resistance may be fortified by use of a "booster shot" of Franklin C-P (Corynebacterium-Pasteurella) Bacterin, several months following the initial vaccination to provide strong resistance against pasteurella infection at the time of greatest exposure.

Dosage: For cattle, 10 cc. For sheep or goats, 5 cc. Inject under the skin, using aseptic precautions. Each dose contains full immunizing properties for each of the infections named.

Prices: 5-dose vial, **\$1.35**; 10-dose vial, **\$2.50**; 25-dose vial, **\$6.00**. Quantity prices on request.

CLOSTRIDIUM NOVI INFECTIONS

Black Disease in Sheep — "False Blackleg" in Cattle

Black Disease (Infectious Necrotic Hepatitis) is the name generally given to infections in sheep caused by *Clostridium Novyi*. *Novyi* is a spore-forming anaerobe widely distributed in nature. Its general characteristics are similar to other clostridia (*chauvei*, *septicum*, *perfringens*) although there are some distinct differences, permitting ready identification in laboratory procedure.

Black Disease in sheep is not widespread. It occurs only in areas where there is sufficient moisture to support a snail population to provide intermediate hosts for liver flukes. Losses occur in fall and winter and are distributed, one or two animals at a time, through a 6-month period.

Spores of *Clostridium Novyi* are ingested and carried in an inactive state to the liver. Damage to the liver by the wanderings of immature flukes apparently creates a favorable environment for reproduction of flukes and production of toxin by *Clostridium Novyi*.

Symptoms: Death is usually sudden, most animals being found dead. If sick animals are observed, they are dull, lag behind the flock, go down and die within an hour without struggling. Animals are in good state of nutrition.

Control: Black Disease may be controlled by employing two lines of attack: Elimination of flukes by treatment of snail-bearing waters by drainage or application of copper sulfate; or by vaccination of all sheep 1 year old or older with *Clostridium Novyi* Bacterin in the spring or early summer.

Cl. Novyi Infections in Cattle

In recent years there have been increasing reports of "False Blackleg" in cattle, caused by *Clostridium Novyi*. Whether there is an increased incidence of the infection, or more accurate diagnosis of the causative organism accounts for its recognition is difficult to say. Both may be a factor.

Differential diagnosis between *Clostridium Novyi* infection and disease caused by other clostridia (mainly blackleg and malignant edema) is difficult. When a reliable *Clostridium Chauvei-Septicum* Bacterin has been used, yet a seeming outbreak (loss of several animals) occurs, infection from other clostridia than *chauvei* and *septicum* should

be suspected, and a thorough laboratory examination made.

In such instances, the use of *Clostridium Novyi* Bacterin would be indicated to aid in lessening losses while waiting for results of laboratory diagnosis. This is considered good practice, even though it would take from a week to 10 days before an appreciable resistance could be developed.

In herds where *Clostridium Novyi* infection has been diagnosed, preventive vaccination should be employed annually, injecting all animals to prevent further loss.

CLOSTRIDIUM CHAUVEI- SEPTICUM-NOVI BACTERIN

Recommended for the vaccination of healthy **cattle, sheep** and **goats** to aid in preventing losses from **black-leg** (*Cl. chauvei*); **malignant edema** (*Cl. septicum*); and **black disease** (*Cl. novyi*).



In areas where black disease is known or thought to be prevalent, the use of this product is especially recommended for over-all protection.

Dosage: For cattle, 10 cc. For sheep and goats, 5 cc. Administer by subcutaneous injection.

Price: 100-cc vial, \$3.00; 250-cc vial, \$7.00. Quantity prices on request.

CLOSTRIDIUM NOVI BACTERIN

Recommended for the vaccination of healthy animals to aid in preventing losses from Black Disease (infectious necrotic hepatitis) in **sheep**, and *Clostridium Novyi* Infection or "False Blackleg" in **cattle**.

Dosage: For sheep or cattle, 5 cc. to be injected subcutaneously (under the skin), preferably on the side of the neck. A second dose in 3 to 4 weeks will increase the initial protection and is recommended in severely infected areas.

Prices: 10-dose (50 cc.) vial, \$1.65. Quantity prices on request.



HEMORRHAGIC ENTEROTOXEMIA

of Baby Calves

Hemorrhagic enterotoxemia is an acute, highly fatal disease affecting large, well-formed, vigorous calves (usually under two weeks of age) which are suckling cows giving large quantities of milk. The disease is caused by **Clostridium perfringens Type C** which grows rapidly under favorable conditions and produces toxins in sufficient amount to cause death of the calf.

Symptoms: Calves are often found dead from no apparent cause; however, symptoms are first noted when calves become listless and quit nursing. They may show signs of colic, uneasiness, straining, and kicking at the abdomen. Bloody diarrhea may or may not be observed. They later become prostrate and develop spasms with death following shortly thereafter, usually within 2 to 24 hours after symptoms are first noted.

Control: The most practical means of controlling hemorrhagic enterotoxemia in baby calves is to vaccinate the cow 2 to 4 months prior to calving with **Clostridium Perfringens Type C Toxoid**. The toxoid should be given in two 5-cc doses from 3 to 5 weeks apart. Administered in this manner, the toxoid causes production of antitoxins which are passed on to the calf in the colostrum to provide a passive immunity which lasts through the critical first few weeks of the calf's life. In following years, cows may be given a single 5-cc booster dose during the 2 to 4 months prior to calving.

The toxoid should not be administered to baby calves, as there is not sufficient time for development of protective antitoxins within the period of highest incidence of the disease.

FRANKLIN CLOSTRIDIUM PERFRINGENS TYPE C TOXOID

Recommended for the vaccination of healthy cows, 2 to 4 months prior to calving, to aid in preventing loss of baby calves from hemorrhagic enterotoxemia.

Also recommended for the vaccination of healthy cattle and calves, as they enter feedlots, to aid in preventing losses from **Cl. perfringens type C enterotoxemia**.

Price: 10-dose (50-cc) vial, \$3.00.

Veterinary authorities in Canada now recognize the incidence of **Clostridium Perfringens Type D** in cattle. Our **Clostridium Perfringens Type D Bacterin** is recommended for use on cattle as well as sheep.

OVINE ENTEROTOXEMIA

(Overeating Disease)

Ovine enterotoxemia causes heavy losses among feedlot and pastured lambs having access to grain. It is caused by the toxin of **Clostridium perfringens Type D**, an organism commonly found in the soil and in the intestinal tract of livestock.

Incidence: Lambs on a heavy diet of rich feeds such as usually found in feedlots, or those being pastured in grain and pea fields are exposed to favorable environment for rapid growth of the organism. Toxins (poisonous substances) are produced in sufficient quantity to cause death of the lamb. Lambs under two months of age are frequently affected. Single lambs nursing ewes giving large quantities of milk are most frequently affected.

Symptoms: Lambs are usually found dead, but in the few cases which may be observed, the symptoms are extreme nervousness, circling, prostration, and (in some cases) scouring. The head is often thrown back. Course of the disease is considered to be from 4 to 8 hours. Death is almost certain.

Control: Lambs should be vaccinated about two weeks before being placed on full feed in the feedlot, or before being turned into grain fields. Enough time must be allowed for development of adequate antitoxins to counteract toxins produced by rapid growth of the organism. To help protect baby lambs, it is recommended to vaccinate the ewe a month before lambing with two 5-cc doses of **Clostridium Perfringens Type D Bacterin** about a week apart. Antitoxins produced in the ewe are passed on to the lamb in the colostrum to provide protection during the critical period. Lambs may be vaccinated with the bacterin when about two months of age.

FRANKLIN CLOSTRIDIUM PERFRINGENS TYPE D BACTERIN

This product consists of alum precipitated whole broth culture which contains chemically killed **Cl. perfringens Type D** organisms and toxoid.

Dosage: 5 cc injected subcutaneously, preferably on the side of the neck.

Prices: 10-dose vial, \$1.10; 50-dose vial, \$4.50. Quantity prices on request.

LEPTOSPIROSIS CAN BE CONTROLLED

Leptospirosis is costing American stockmen in excess of \$100,000,000 each year. "Lepto" as it is commonly called, has spread rapidly during the past few years. It has been found in cattle and swine herds in all parts of the country.

The disease, caused by a tiny bacterial organism, *Leptospira pomona* (and possibly other leptospira strains), is more prevalent in cattle and swine, but is also found in horses, sheep, other domestic animals, and man. It is spread by contact with the urine of infected animals through the mucous membranes of the eyes, nose, mouth, or through breaks in the skin. Contact may be made from infected animals, contaminated bedding, feed, poorly-drained pastures, ponds, or slow-moving streams.

Symptoms of leptospirosis are varied, often being confused with those of other diseases. When noted, initial symptoms are a rapid rise in temperature, depression, lack of appetite, or anemia. Urine may be coffee-colored and blood-streaked. Dairy animals may show a decided drop in milk production. Symptoms may pass unnoticed in range animals with abortion explosions being the first indication of the disease.

In swine there are often no signs of infection until abortion storms occur. In some instances, pigs may be carried full term, but litters may contain weak or dead pigs.

Control of leptospirosis consists of management and vaccination:

Avoid conditions (above) that provide for contact with carrier animals or their urine; blood-test all replacement animals, particularly in purebred or dairy herds; isolate animals showing symptoms, and replacement animals entering the herd; burn or bury aborted fetuses, taking care in handling to avoid infection to yourself.

Follow a sound vaccinating program:

Vaccinate all animals in herds located in areas where the disease is commonplace or has been identified; purebred and dairy herds, particularly when animals are being shown at stockshows or when replacements are frequently added to the herd; all cattle, especially calves and yearlings, entering feedlots or otherwise being closely confined in association with other animals; breeding animals about three weeks prior to breeding.

Re-vaccinate breeding herds at 6-month intervals until no new cases have developed, then annually. Very young animals at three months of age.

About a week to ten days is required, following vaccination, to develop strong resistance, which appears to persist for a period of twelve months or longer. Due to varying conditions which farm animals may encounter, and with so much still to be learned about leptospirosis, it is considered to be good economic practice to follow a re-vaccination program as suggested above, to maintain a strong resistance in all susceptible animals against exceptionally virulent exposure.

Treatment is not generally considered to be very satisfactory. Antibiotics (penicillin & dihydrostreptomycin, and others) given in massive doses, may be helpful to lessen the severity in acute cases and to aid in avoiding secondary infections.

Infected animals should be retained in the herd following recovery. They may be carriers for some time, but will be immune to reinfection. The disease does not appear to cause permanent damage to the reproductive organs, and almost all animals will breed again.

FRANKLIN LEPTOSPIRA POMONA BACTERIN

Recommended for the vaccination of healthy **cattle, swine, horses, and sheep** to aid in preventing losses from *Leptospira pomona* infection.



Franklin *Leptospira Pomona* Bacterin consists of chemically killed, aluminum hydroxide adsorbed, whole culture of *Leptospira pomona* organisms. The seed cultures used in this product are carefully selected and subjected to continuous and thorough testing to assure highest potency.

Dosage: For all species, 5 cc. injected subcutaneously (under the skin), employing full aseptic precautions.

Caution: Should anaphylactic shock occur, prompt treatment is imperative. Adrenalin (Epinephrine) solution, sterile 1:1000 by subcutaneous or intramuscular injection, is a specific remedy (see page 22). Consult your veterinarian for correct dosage and use.

Prices: 5-dose vials, each 90c; 10-dose vials, each \$1.50; 25-dose vials, each \$3.50; 50-dose vials, each \$6.50.

HEMORRHAGIC SEPTICEMIA (SHIPPING FEVER)

Hemorrhagic septicemia is the name used to describe a highly infectious disease of livestock, caused by *Pasteurella multocida* which may be complicated by other organisms, the more common of which are corynebacteria, streptococci, and staphylococci.

Shipping Fever is the name more commonly used to describe hemorrhagic septicemia-like symptoms generally associated with infection following the rigors of shipping, weaning, or handling of cattle. The disease should be considered to be a disease complex as the primary cause is not entirely understood. Several viruses (including IBR virus) have been incriminated as triggering agents, complicated by infection with *Pasteurella multocida* and other bacteria. *P. multocida* has often been considered to be the primary cause.

Incidence of shipping fever is highest among stressed animals (particularly young ones) following extremes in weather, excessive and rough handling, changes in feed, shipping, and weaning.

Symptoms vary with the intensity and location of the infection, and are so varied that they are often confused with those of other diseases. First symptoms are loss of appetite and a rapid elevation in temperature, with the affected animal standing apart from the herd, head down and abdomen tucked up. Temperature may range from 104° to 107°. There may be a dry, painful cough; nasal discharge; difficulty in breathing; muscular trembling; and an appearance of lameness when the animal is forced to move.

As the disease progresses, there may be constipation followed by diarrhea, frequently blood-tinged. There may be local inflammation and soft swellings (which pit on pressure) under the skin about the head, throat, dewlap, legs, and shoulders. The course of the disease may be rapid, with death following within a few hours after symptoms are first noted. In other cases, symptoms may persist for several days, with some few animals recovering.

Control of shipping fever should be aimed at avoiding conditions which may cause undue stress, as much as possible. These

include: over-heating from driving, with sudden chilling; over-crowding in pens, cars, or trucks; over-feeding or over-watering; lack of feed, water, and rest during shipment; operations such as branding, castrating, or dehorning during stress periods.

At the present time, **Preventive vaccination** is aimed at building resistance against infection from *Pasteurella multocida*. Because it takes about 10 days to 2 weeks for an animal to develop strong resistance following vaccination, it is recommended that cattle (particularly calves) be vaccinated several weeks prior to exposure to stress conditions. A second vaccination 3 to 5 days following the first will increase the degree of resistance.

A "spring and fall" vaccination program has been followed successfully by many cattlemen to lower incidence of the disease. Calves are vaccinated in the spring with **Triple Bacterin; C-P Bacterin; or Mixed Bacterin (Bovine) Formula 1**.

Although the disease is not too prevalent during summer months, the spring vaccination provides an initial resistance that may be increased in the fall by means of a "booster shot." (See page 4). This "booster shot" may be given just prior to weaning or shipping, because resistance may be developed in days instead of weeks.

When it is not practical to vaccinate with bacterins sufficiently in advance of exposure to stress conditions, an immediate, temporary resistance may be obtained from the use of **Anti-Hemorrhagic Septicemia Serum** or **Corynebacterium-Pasteurella Serum**.

Treatment: Sick animals should be segregated and placed in comfortable surroundings if possible. Prevent dehydration by supplying plenty of water, forcing if necessary. **Sulfonamides** (see pages 25 and 26 for Franklin Tri-Sulfa products) have been highly effective when employed early, as have antibiotics (see page 39 for information on Franklin Penicillins). A combination of both may be used.

The earlier treatment is started, the better the results will be.



BACTERINS AND ANTI-SERUM**FOR CONTROL OF HEMORRHAGIC SEPTICEMIA****C-P BACTERIN****(Corynebacterium-Pasteurella)**

Recommended as an aid in preventing infections in cattle in which Pasteurella organisms (hemorrhagic septicemia) and Corynebacterium organisms (pulmonary edema) are involved. We recommend it as the product of choice for developing resistance against these organisms.

The formula consists of chemically killed bacteria produced by the washed culture method:

Pasteurella multocida, Types

I, II, and III. 66 $\frac{2}{3}$ %

Corynebacteria. 33 $\frac{1}{3}$ %

Franklin C-P (Corynebacterium-Pasteurella) Bacterin is available in the concentrated 2-cc dose preferred by most stockmen, and for those who prefer a larger size dose, it is also available in the 5-cc dose.

Dosage: For healthy cattle, 2 cc's of the concentrated product, or 5 cc's of the less concentrated product.

Prices: 2-cc dose in 10-dose vial, **\$1.35**; 50-dose vial, **\$6.25**; The 5-cc dose in 5-dose vial, **75c**; 10-dose vial, **\$1.35**; 50-dose vial, **\$6.25**. Less in quantities.

TRIPLE BACTERIN**(Cl. Chauvei-Septicum Pasteurella)**

For vaccination of healthy cattle, sheep, and goats against **Blackleg, Malignant Edema, and Hemorrhagic Septicemia** (Pasteurella multocida).

Each dose contains full immunizing properties for each of the infections named.

Immunity, of about five or six months duration, to Hemorrhagic Septicemia may be expected from the use of this bacterin. This resistance may be fortified by use of a "booster shot" of C-P (Corynebacterium-Pasteurella) Bacterin, several months following initial vaccination to provide strong resistance to pasteurella infection at the time of great exposure.

Duration of immunity to Blackleg and Malignant Edema fully discussed on page 8.

Dosage: for cattle, 10 cc; for sheep or goats, 5 cc. Inject under the skin, using aseptic precautions.

Prices: 5-dose vial, **\$1.35**; 10-dose vial,

\$2.50; 25-dose vial, **\$6.00**. Quantity prices on request.

ANTI-CORYNEBACTERIUM-PASTEURELLA SERUM

Recommended for producing a quick resistance to hemorrhagic septicemia and for the treatment of hemorrhagic septicemia or shipping fever complicated with diphtheroid infection in cattle, swine or sheep.

Although Franklin Corynebacterium - Pasteurella Bacterin is recommended and preferred for establishing resistance to hemor-

rhagic septicemia in cattle under normal conditions, its use should be employed two or more weeks prior to weaning or shipping, or other conditions which may lower the animal's natural resistance to the disease. When such advance precautions cannot be employed, the use of Anti-Corynebacterium-Pasteurella Serum is indicated.

Dosage: For prevention, 10 to 15 cc's per 100 pounds of body weight. For treatment, 20 to 25 cc's per 100 pounds of body weight, repeating at 24-hour intervals as indicated. The minimum dosage for prevention should be not less than 40 cc's, and for treatment, not less than 80 cc's.

Prices: 50-cc vial **\$2.00**; 100-cc, **\$3.75**; 250-cc, **\$8.75**;

Important: A dependable fever thermometer is a valuable asset which should be included in the veterinary kit of every stockman. Franklin offers a heavy-duty thermometer of finest quality and accuracy. See page 57.

CREOLIN DISINFECTANT

The original and only genuine CREOLIN.

An ideal disinfectant for everyday use on the farm, because it is safe, non-poisonous, non-caustic, when used according to directions.

Prices: 4 ozs., **59c**; 8 ozs., **89c**; 16 ozs. **\$1.29**; 40 ozs., **\$2.25**; 160 ozs., **\$5.95**.



PIPERAZINE

A one-day treatment for the removal of large **roundworms** (ascaris Lumbricoides) in **swine**; large **roundworms** (Ascaridia) in **chickens** and **turkeys**; and for removal of **roundworms** (Ascarids), small **strongyles**, and adult **pinworms** in **horses**.



Franklin **PIPERAZINE Drinking water Wormer** contains 17% Piperazine (base) which is equal in therapeutic value to: 45.9% Piperazine Adipate; 48.5% Piperazine Citrate; 35.4% Piperazine Dihydrochloride; or 38.6% Piperazine Hexahydrate.

For swine, mix with drinking water or slop at the rate of 1 fluid ounce for each 100 pounds of pig weight; **for chickens**, 1 fluid ounce in 1½ gallons of water to treat from 50 to 100 birds, depending upon age; **for turkeys**, 1 fluid ounce in 1½ gallons of water to treat 35 to 65 birds, depending upon age; **for horses**, mix with water for drinking or as a drench, 1 fluid ounce for each 50 pounds of body weight, with maximum dosage 16 fluid ounces piperazine per animal.

Prices: 8-ounce, **\$1.00**; 16-ounce, **\$1.75**; 32-ounce, **\$3.00**; 128-ounce, **\$10.80**. Postage extra.

PIG BACTERIAL SCOUR TREATMENT

Pig Bacterial Scour Treatment is especially compounded to aid in the treatment and prevention of bacterial scours and associated pneumonia commonly found in baby pigs.

Neomycin and Sulfaguanidine are unabsorbed confining their antibacterial action to the intestine while Sulfathiazole and Sulfamerazine are absorbed and act systematically to combat bacterial of the pneumonia complex.

Price: 8 oz. bottle, **\$3.00**. Postage extra.

Control overeating disease: Ovine Enterotoxemia (overeating Disease) is a widespread disease causing heavy losses among feed-lot and pastured lambs. For valuable information concerning control measures, refer to page 10.

A HOG HEALTH PROGRAM

These suggestions (compiled from recommendations of authorities in swine management) will aid in avoiding losses from diseases of swine:

1. Buy all breeding stock from herds that are known to be healthy. Isolate these animals for at least three weeks. They should have been blood tested for Bang's Disease and leptospirosis.

2. Inject the sow with about 5 cc. penicillin-dihydrostreptomycin solution a day or two before farrowing to aid in protecting against metritis and mastitis. A second injection, following farrowing, may be given.

3. Dip the umbilical cord of each pig in disinfecting solution as soon after birth as possible (see Tincture of Iodine, page 37).

4. Inject each pig with injectable iron solution on third day.

5. Castrate pigs to be marketed when they are three to five days of age, disinfecting skin with iodine compound to avoid wound infection.

6. Vaccinate every pig with erysipelas bacterin at the age of six weeks.

7. Vaccinate every pig with Leptospira pomona bacterin at the age of ten weeks.

8. Re-vaccinate sows against leptospirosis and erysipelas five weeks after each breeding. Vaccinate boars twice annually.

9. Hogs, particularly young animals, should be wormed with Piperazine Drinking Water Wormer at two-month intervals (worm newly purchased hogs during isolation period).

10. Spray sows thirty days prior to farrowing. Spray other hogs at sixty-day intervals. Lindane or Toxaphene-Lindane are recommended to control mange or lice.

11. Observe strict sanitary control of lots, farrowing, and feeding areas including rodent and fly control measures.

12. Isolate any sick animal immediately. Obtain an accurate diagnosis. Have any animals that die posted by a veterinarian to determine if cause is due to infectious disease.

These are general recommendations and may be adjusted to individual requirements.

SWINE ERYSIPELAS

Swine Erysipelas is an infectious disease of swine caused by the germ, *Erysipelothrix rhusiopathiae*. As a rule this disease occurs principally in the field in three forms: (1) The acute septicemic form, (2) the chronic form and (3) a very mild form commonly referred to as Diamond Skin Disease.

At the present time the acute septicemic form seems to occur more often than the other forms. This form causes the heaviest losses, particularly in pigs. Affected animals suddenly appear ill. Temperatures are extremely high in the early stages. The skin may show red discolorations, very noticeable in white haired animals. Death may occur within a few days after symptoms are noticed.

The chronic form of the disease is more prolonged but also causes considerable losses. Affected animals may manifest difficult breathing, swollen joints associated with considerable soreness and stiffness, causing a tendency to walk on the toes. The skin may be reddish-purple in color.

The principle symptoms noted in the mild form are reddish, diamond shaped eruptions (Diamond Skin Disease). The losses in this form of the disease are very low.

SWINE-ERYSIPELAS SERUM

Anti-Swine-Erysipelas Serum produces a high degree of protective immunity lasting, under usual field conditions, for approximately two weeks. Animals having the disease or coming in contact with it within two weeks after receiving the proper serum dosage may develop some degree of active immunity lasting, at times, for a considerably longer period. Outbreaks of the disease are usually promptly checked following the administration of the proper serum dosage, and exposed animals usually protected.

Dosage: For Prevention—Pigs up to 50 lb., 5 cc.; 50 to 75 lb., 10 cc.; 75 to 100 lb., 15 cc.; 100 lb. or over, 20 cc.

Treatment: At least double the prevention dosage, repeated at 24-hour intervals as needed. Inject dosage in axillary space.

Prices: 500-cc vial, **\$15.00**; 250-cc vial, **\$7.50**; 100-cc vial, **\$3.75**; 50-cc vial, **\$2.25**.

Note: Anti-Swine-Erysipelas Serum may also be used to control erysipelas in turkeys. See directions.

FRANKLIN ERYSIPELAS BACTERIN

For the vaccination of healthy **swine** for the prevention of erysipelas.

The use of this product will not transmit the disease to unvaccinated swine, and will not contaminate the premises.

Swine breeding herds should be vaccinated every 6 to 8 months to maintain strong resistance. Boars may be vaccinated at any time; sows should be vaccinated before breeding, preferably.

Caution: As with any product of this kind, anaphylactoid reaction (shock) may follow its use. Refer to page 22 in this catalog, and to recommendations on product label.

Dosage: Suckling pigs, 3-cc. (see directions for re-vaccination); older swine, 5-cc. Allow 14 to 21 days for full immunity to develop.

Price: 25-cc vial, **\$1.25**; 50-cc vial, **\$2.25**; 125-cc vial, **\$5.25**; 250-cc vial, **\$7.00**.

FRANKLIN IRON-DEXTRIN 100

INJECTABLE

For **Prevention** and **treatment** of **iron deficiency anemia** in **baby pigs**, to be administered by intramuscular injection. Each 1-cc. contains colloidal ferric oxide equivalent to **100 mg. iron**, stabilized with low viscosity dextrin.

By providing adequate amounts of iron during the first few days of the pig's life, resistance to infection will be increased and better weight gains will result.

For **prevention**, inject 1-cc. to 2-cc. at 2 to 4 days of age, depending upon degree of iron deficiency (see circular enclosed with product); for **treatment**, inject 2-cc. at any time between 7 and 21 days of age.

Price: 10-cc vial, **\$2.50**; 20-cc vial, **\$3.65**; 50-cc vial, **\$8.25**. Postage Extra.



FRANKLIN PELESTROL* GROWTH BOOSTER PELLETS

Containing Diethylstilbestrol

For implantation in suckling steer calves and steers on pasture or in feedlots, to produce more rapid weight gains with increased feed efficiency. Each pellet contains 15 milligrams diethylstilbestrol.

Pelestrol* Growth Booster Pellets have been formulated to achieve a gradual release of the drug for absorption into the animals' system over the normal pasturing or feeding period of 120 to 150 days. The hormone improves digestive processes, thereby producing more efficient utilization of feed. Best results may be expected when steers are consuming a nutritionally balanced, protein-supplemented diet. **Important:** This product should not be used in pastured steers unless pasture is in good condition to provide ample feed; if implanted in steers on poor or drouth-stricken pasture, undesirable results may occur.

Dosage: In pastured steers weighing 200 to 400 pounds, implant one pellet under the skin at the base of an ear; in pastured or feedlot steers weighing 400 pounds or more, implant two pellets as directed above. Do not slaughter for at least 120 days following implantation.

Prices: 15-milligram pellets, per vial of 50, **\$6.65**; vial of 100, **\$11.65**; vial of 250, **\$27.00**. Postage extra.

* R 566,701 of related company.

FRANKLIN PELJECTOR** IMPLANTER

To implant Pelestrol* Growth Booster Pellets, mount vial containing pellets on implanter as illustrated; insert needle under skin at base of ear; as plunger is withdrawn, one pellet drops into discharge chamber; release plunger. To implant a second pellet, leave needle in place and repeat procedure.

Peljector** with 2 needles, **\$11.00**, postage extra.

** R 559,664 of related company.

PREGNANT MARE SERUM

Recommended as an aid in overcoming breeding difficulties in many species of animals, induction of estrus in females, and stimulation of spermatogenesis in males.



A product of Colorado Serum Company, Pregnant Mare Serum will cause some mammals to breed out of their normal season. Delayed sexual development may be helped considerably by administration of the serum until improvement is noted. Usually, the administration of Pregnant Mare Serum to

females results in ovulation within three days, occurring with or without heat symptoms. A second dose should follow in case breeding does not occur. A high percentage of pregnancy has resulted following the second injection when animals are bred during oestrus. Treating the male at the same time as the female is suggested if he has not been in regular service.

Colorado Pregnant Mare Serum may be used as recommended above in **cattle, horses, swine, goats, sheep, foxes, mink, and dogs.**

Dosage varies from 2 cc. to 30 cc. depending on breed of animal, and size. Administer by subcutaneous injection in accordance with instructions found on the label.

Prices: 30-cc vial, **\$4.50**;

DIETHYL STILBOESTROL D.P.

This product has been proved successful in the treatment of retained afterbirth and endometritis and to initiate estrus or heat. Diethyl Stilboestrol is especially suited for use with large animals due to its prolonged effect. It is administered by a hypodermic syringe intramuscularly. The following doses are recommended. (Strength, 10 mgms per cc).

Cows and Mares..... 20 to 25 mgs.
Sows..... 5 to 10 mgs.
Bitches..... 0.5 to 3.0 mgs.

It is available in 25-cc vial (rubber capped).

Price: **\$2.10**; Also 10-cc vial, each, **\$1.25**.



Sterile solutions and sulfonamide solutions (sterile and non-sterile) for parenteral administration to livestock may be found listed on pages 23 26 84.

FRANKLIN BACTERINS

Produced by the Most Advanced and Efficient Methods Known to Science



Franklin Bacterins (excepting Blackleg Bacterin, Clostridium Chauvei-Septicum Bacterin, and the Chauvei-Septicum portion of Cl. Chauvei-Septicum-Pasteurella Bacterin) are produced by the "washed culture method," which is the method in general use for producing bacterins for human use.

This method involves more work and handling in production and is more expensive than the "whole culture method."

In general, some of the best-informed authorities favor the washed culture method.

It is generally acknowledged that severe vaccination reactions, classified as anaphylactic reactions, are very much less likely to occur following the use of Washed Culture Bacterins,

than where the Whole Culture products are used with their large content of so-called foreign proteins.

CAUTION: Occasionally the use of Mixed Bacterin (Bovine) Formula 3 or Anti-Bacterial Serum Formula 3 will produce a shock (sometimes fatal) on the order of anaphylaxis in young animals. Therefore, in case of previous vaccination of dam or offspring, or where the disease is prevalent on premises or in herds, a test should be made for sensitivity by administering a minute dose (approximately one-tenth of a cc. of Franklin Concentrated Bacterin) and allowing several minutes in which to observe for reactions before the full dose is used. Animals which exhibit marked reaction should be promptly treated for shock. Adrenalin (Epinephrine) solution, sterile 1:1000, by subcutaneous or intramuscular injection, is a specific remedy for anaphylactic shock. **Dosage:** Large animals, 4 to 8 cc., to be repeated in 15 to 30 minutes if required. Consult your veterinarian for instruction.

Gestation Table

Reference to this table will tell you the time to expect colts, calves, lambs and pigs, the date of service being known. While only one service date appears under each month, you may readily compute from this any date of the month. For example: Time of service, January 10. Date of expectancy for mares, December 16; cows, October 20, etc.

TIME OF SERVICE	MARES 340 DAYS	COWS 283 DAYS	EWES 150 DAYS	SOWS 112 DAYS
Jan. 1	Dec. 6	Oct. 10	May 30	April 22
Feb. 1	Jan. 6	Nov. 10	June 30	May 23
March 1	Feb. 3	Dec. 8	July 28	June 20
April 1	March 6	Jan. 8	Aug. 28	July 21
May 1	April 5	Feb. 7	Sept. 27	Aug. 20
June 1	May 6	March 10	Oct. 28	Sept. 20
July 1	June 5	April 9	Nov. 27	Oct. 20
Aug. 1	July 6	May 10	Dec. 28	Nov. 20
Sept. 1	Aug. 6	June 10	Jan. 28	Dec. 21
Oct. 1	Sept. 5	July 10	Feb. 27	Jan. 20
Nov. 1	Oct. 6	Aug. 10	March 30	Feb. 20
Dec. 1	Nov. 5	Sept. 9	April 29	March 22

FRANKLIN FLEA-TICK BOMB

Containing Co-Ral — Neguvon

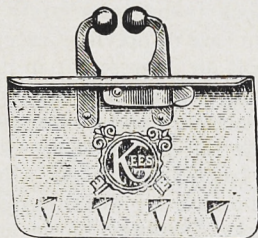
A superior product to kill **fleas, lice, and ticks on dogs**. Provides a rapid initial kill plus excellent residual control of these pests after each treatment. For most effective residual control, the dog's bedding should be treated to help prevent re-infestation.

Apply as required at weekly intervals.

Price: 6-ounce aerosol can, **\$2.25**. Postage extra.



KEES CALF WEANER



Stickers may be bent down if not needed. Simple to put on. Just open and snap closed on nostrils. **Price:** Calf size, **.50c**; yearling size, **.65c**. Postage extra.

FRANKLIN STOCK DIP AND DISINFECTANT

Franklin Stock Dip and Disinfectant is a coal-tar derivative possessing parasitic, germicidal, and disinfecting qualities. When diluted as directed, it is neither caustic nor poisonous to human beings or to animals, their hair, skin, or fleece. Its disinfecting qualities promote healing of minor wounds.

Franklin Stock Dip and Disinfectant is widely used to aid in "setting" the hair of show cattle. It is standard equipment in the show box of many exhibitors, both for use on the cattle and in the show barn.

Prices: 20-oz. tins, **95c**; 40-oz., **\$1.50**; 160-oz., **\$4.65**; 5 gallons, **\$19.90**. Drum lots, per gallon, **\$2.60**.

FRANKLIN FROTHY BLOAT TREATMENT

A **defoaming agent** for emergency use in treatment of frothy bloat in cattle, sheep, and goats. Gives quick relief by breaking the froth within the ruminal food mass.

The action of **silicone defoamers** in the treatment of frothy bloat is well recognized. By breaking down the foamy mass within the rumen, thus permitting the entrapped gas to escape, the animal is able to relieve the distension of the rumen by belching.

Franklin Frothy Bloat Treatment contains adequate dosage of **dimethylpolysiloxane** in an emulsion to spread promptly over the ruminal food mass, to act as a rapid defoaming agent. It may be administered by three routes, depending upon the convenience to the user and the severity of bloat: (a) As a drench when mixed with water; (b) through a stomach tube passed into the rumen of severely bloated animal; or (c) by injection **directly into the rumen** of severely bloated animals by means of a 10-gauge needle attached to the cap of the bottle containing the medication (see page 84 for instructions).

Prices: 4-ounce, **\$1.60**; 16 oz. **\$4.00**. Less in quantities. Postage extra.

Note: The Rumen Injector Needle shown in the above illustration is **not** included with the Bloat Treatment. See page 71 for this item.

RED WATER DISEASE

Red Water Disease (Hemorrhagic Disease, Bacillary Hemoglobinuria) is a highly fatal disease caused by the anaerobe, *Clostridium Hemolyticum*. Serious losses among cattle and sheep are caused each year in irrigated pastures and poorly drained valley ranges.

CLOSTRIDIUM HEMOLYTICUM BACTERIN

For the prevention of **Red Water Disease** (Hemorrhagic Disease, Bacillary Hemoglobinuria).

Prices: 5-dose (50-cc) vial, **\$1.35**; 10-dose (100-cc) vial, **\$2.60**; 50-dose (500-cc) vial, **\$12.00**. Quantity prices on request.

For more complete information, see your Franklin dealer or write us.



PARENTERAL ADMINISTRATION OF MEDICINES TO LIVESTOCK

Parenteral administration of medicines refers to administration by other than the digestive system. In general, it refers to various types of hypodermic injections.

GENERAL INFORMATION

Parenteral injections of various medicinal agents are commonly administered by stockmen. Such injections are a convenient and accurate means of treating sick animals or administering vaccines, serums and bacterins.

ASEPTIC PRECAUTIONS

Aseptic precautions should be taken in any parenteral injection to avoid introduction of disease germs along with the medication or biological agent. This is particularly important when sick animals in a herd are being treated, as a virulent infection may be spread from one animal to another.

Sterilization of equipment (syringes, needles, intravenous outfits, etc.) is important and may be easily accomplished by boiling in water for 15 to 20 minutes prior to use. The equipment should be protected from contamination before and during use.

Needles should be disinfected between use on animals. A pan of 70% rubbing alcohol may be kept nearby and the needle dropped into it after each use, a fresh needle taken from the pan and used on the next animal.

Site of injection should be cleansed and disinfected. The area may be swabbed with 70% rubbing alcohol. Heavily-haired animals should be clipped around site of injection.

Rubber stopper of the bottle should be disinfected with alcohol before puncturing with needle.

SYRINGE FILLING SUGGESTIONS

Prior to filling syringes, be sure to read all instructions and directions for medicinal agent to be administered. Shake all biological products well before filling.

Use one needle for filling syringe, leaving it in the bottle between syringe fillings. Use of a 14 gauge needle will facilitate filling.

Be sure syringe plungers are adjusted and lubricated, then insert adaptor in needle hub and withdraw substance. Work plunger back and forth to expel air bubbles and assure a full syringe.

SUBCUTANEOUS INJECTIONS

The subcutaneous (under the skin) injection is most frequently used for admin-

istration of biologicals. Such injections are slowly absorbed, thus providing a longer response to the immunizing agent. There is generally little danger from swellings, due to pressure necrosis, from subcutaneous injections. All aseptic precautions, mentioned above, should be observed.

A $\frac{3}{4}$ " or 1" needle (16 or 18 ga.) is generally used for subcutaneous injections. The skin should be pinched between the thumb and forefinger of one hand, the needle inserted with the other and the dose ejected. Pointing the needle downward will help in avoiding leakage of the injected substance from the puncture.

INTRAMUSCULAR INJECTIONS

Intramuscular injections are often used for administration of biologicals and drugs when a more rapid absorption is desired. The heavily muscled parts of the body, such as the hind quarters, shoulders and neck, should be selected as injection site. More than 25cc should never be injected in any one spot.

The site of injection should be prepared and the needle (without syringe) plunged into the muscle. 16 or 18 ga. needles, 1" to 1½" in length are generally used. The needle should be very sharp.

Observe the hub of the needle to see if blood begins to flow out of the needle. If so, the needle is probably in a vein and should be removed and reinserted.

Attach the syringe to the needle and pull plunger outward to check if needle is in a vein. If so, blood will be drawn into the syringe, and needle should be inserted into another site.

The medicant should be injected slowly into the muscle, the needle withdrawn and the area massaged to spread the medicant throughout the muscles.

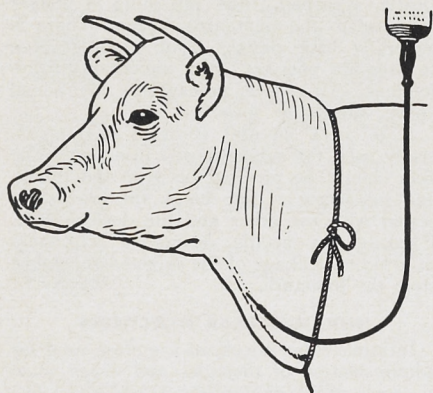
INTRAVENOUS INJECTIONS

Injection of various medicines and drugs into the jugular vein assures rapid absorption into the circulatory system and the body.

Intravenous injections are made with a gravity flow intravenous outfit (Franklin Intravenous Set) and a 14 to 16 ga. needle, 1½" to 2" long. The needle should be very sharp. All equipment and site of injection should be disinfected as suggested above.

The jugular vein (see illustration) should be located by means of a rope tourniquet to distend the vein, which is located in the

jugular vein groove on the lower part of either side of the neck. Grasp the vein and skin between the thumb and forefinger and



insert the needle through the skin directly over the vein and near the pressure point, with the beveled edge next to the skin and the point towards the head. After the skin is pierced, the needle is inserted into the vein. Blood will flow from the needle when it enters the vein.

The bottle containing the medicant is then elevated and some of the contents allowed to run through the tube to eliminate air bubbles. The adaptor at end of the tube is then inserted in the needle hub and the solution permitted to run slowly into the vein. Remove the rope tourniquet before allowing solution to flow into vein. The flow may be regulated by compressing the tube with the fingers. Intravenous injections should be made slowly, as a too rapid flow may cause shock. If signs of shock appear, the flow should be discontinued.

When injection is complete, remove needle with a straight pull. Then apply pressure over area of injection momentarily to control any bleeding through the puncture.

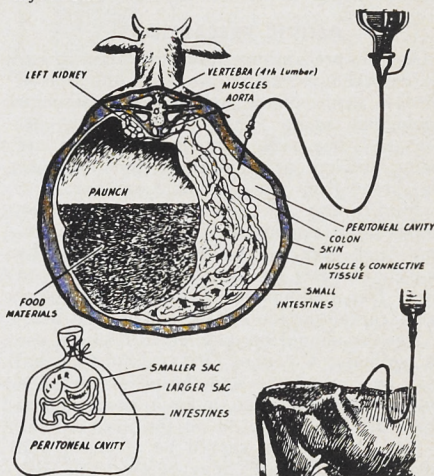
Detailed instructions are attached to each Franklin solution recommended for intravenous administration.

INTRAPERITONEAL INJECTIONS

An intraperitoneal injection is made into the so-called peritoneal cavity. This cavity is formed by the peritoneum which is a large thin sheet of tissue which is doubled upon itself. This may be considered as two sacs, the larger one forming a lining for the

abdominal cavity, within which is a smaller one containing the viscera (stomach, paunch, intestines, liver, etc.) The space between the two sacs forms the peritoneal cavity into which the needle is inserted. (See illustration, slightly exaggerated).

Absorption of sterile solutions from such an injection is rapid and for all practical purposes is as effective as an intravenous injection. Absorption of injected material begins immediately and effects will usually begin within 15 to 45 minutes following injection.



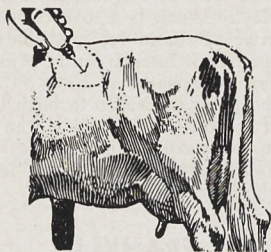
The site for injecting the needle is in a triangular space, located on the right side of the cow and just under the loin, in back of the last rib and in front of the hip bone. See illustration.

A 16 or 14 ga. needle, 1 3/4" long is preferred and should be sharp. After preparing the site for injection (see above), plunge the needle quickly into the skin, directed toward the center of the abdomen all the way to the hub. The solution and intravenous set should then be attached to the needle and injection should proceed as for an intravenous injection. If solution does not flow readily, the needle should be withdrawn slightly and the direction of its slant changed until the liquid flows freely.

Intraperitoneal injections may be made on sheep, hogs, and pigs. See direction insert with each Franklin product recommended for this type of administration for more complete details.

INTRARUMINAL INJECTIONS

The injection of liquids directly into the rumen (paunch) is rapidly coming into more popular use. It is a convenient means of administering medicines into the digestive tract without the dangers attendant to drenching or pilling. The administration is quick, requires less restraint of the animal and subjects the patient to less stress, an important factor in treating a sick patient. More accurate dosage may be given, with assurance that the animal will receive the entire dose.



Using aseptic precautions, puncture the abdominal wall on the left side of the animal in the triangular area commonly called the "hollow of the flank", formed by the spinal column at the top, the hip bone to the right, and the last rib to the left. (See illustration). Needle should be pointed towards the elbow of the right foreleg when making puncture. A 3" to 4" needle should be used to assure penetration into the rumen (paunch). The Franklin Special Intraruminal Needle, 10 gauge by 4" with hub to fit conventional dose syringe is ideal for this purpose. Or, the use of the Plastic Franklin Rumen Injection Bottle with Special Needle provides an economical and convenient means of administration.

INTRAMAMMARY INFUSIONS

The use of udder instillations or intramammary infusions is a common practice in treatment of mastitis. Stockmen should appreciate the need for aseptic precautions in such treatment, as careless and unsanitary practices may introduce infections of yeasts, molds or bacteria in the udder that may not respond to antibiotic or sulfonamide treatment.

Milk out the quarter thoroughly. Wash and dry the udder, cleaning the teats and teat opening thoroughly with 70% rubbing

alcohol. Wash hands thoroughly and dry them with a clean towel.



Do not remove the cap from nozzle of tube or syringe until ready to use. Insert the nozzle into the teat canal and squeeze the entire contents into the quarter. Remove the nozzle, hold the end of the teat with one hand and with the thumb and forefinger of the other force the contents from the teat canal up into the quarter. Massage gently, but thoroughly, to distribute the ointment upwards throughout the quarter. Franklin Udder-Eze or Chap Ointment provide an excellent massage lubricant and aid in reducing swelling of the quarter.

CONVERSION TABLE

Quite often, the mixing directions found on the labels of various preparations refer to small units of measure. This is particularly true in the use of concentrates for preparing small amounts of solutions, such as insecticides, for limited use. In such instances, it is convenient to use a standard measuring cup or measuring spoons. The following equivalents may be of value in this connection:

3	teaspoonfuls.....	= 1	tablespoon
2	tablespoonfuls.....	= 1	fluid ounce
16	tablespoonfuls.....	}	= 1 cup
2	gills.....		
$\frac{1}{2}$	pint.....		
8	fluid ounces.....		

ANAPHYLACTIC SHOCK

Anaphylactic shock is a type of allergic reaction usually limited in its cause to the injection of a foreign protein into an animal that is sensitive to one of the types of protein contained in the injectable substance. In the case of bacterins, this may be protein from the broth in which the culture was grown, or it may be due to the protein in the killed organisms contained in the product. In any event, the animal involved has been exposed and sensitized to the causative protein usually not less than two weeks prior to the time of the shock-producing injection.

The protein which caused the animal to become sensitized may have gained access to the body in one of several ways, such as (1) previous vaccinations; (2) puncture wounds caused by splinters, thorns, or cactus stickers that could have been contaminated with minute quantities of protein; (3) the sensitizing protein could have been consumed in the feed and/or water; (4) it is possible that the mother may have been sensitized and passed this sensitivity on to the calf, either prior to birth or in the colostrum following birth.

The theories of the mechanisms involved in anaphylaxis are extremely technical and still uncertain. It is agreed that it is closely tied in with immunity production; however, in a reverse reaction to normal immunity production. Normal immunity production is called prophylaxis. A reverse reaction to this is called anaphylaxis.

It should be understood that anaphylaxis is due primarily to the sensitivity of the animal's system at the time of injection of the product. If the animal's system is sensitive, it will produce an anaphylactic reaction. The degree of anaphylaxis produced depends upon (1) the amount of sensitizing protein received by the animal and (2) the length of time since the animal received the sensitizing protein prior to injection of the anaphylactic shock-producing injection.

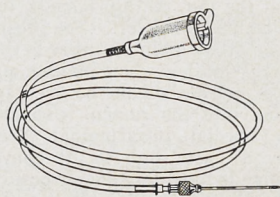
Another point about anaphylactic shock that should be understood is that it is a situation of individual animals and not necessarily a herd problem. Unfortunately, there is no practical means of identifying the individual animal that will be susceptible to shock. It therefore becomes advisable to be able to recognize the early symptoms of shock so that treatment can be used to prevent losses. The symptoms of anaphylactic shock are manifested within a few minutes to sev-

eral hours following the injection which brought about the reaction. The symptoms of anaphylactic shock are as follows: First, the animal shows an anxiety, glassy staring eyes, increased salivation, and grinding of the teeth; a rapid breathing becomes noticeable, followed by muscular tremors and a staggering gait. The animal generally collapses, followed by convulsions which usually terminate in death.

Anaphylactic shock should be considered as an emergency and treatment should be instigated promptly upon recognition of symptoms. The recommended treatment for anaphylactic shock is 4 to 8 cc. of a 1:1000 solution of adrenalin (epinephrine) given by subcutaneous or intramuscular injection. The dose may be repeated in 15 to 30 minutes if indicated. It is advisable to have the recommended treatment on hand at the time vaccination is started due to the fact that immediate treatment is necessary in the event anaphylaxis occurs.

FRANKLIN INTRAVENOUS SET

For the intravenous or intraperitoneal administration of sterile solutions by gravity flow.



The Franklin Intravenous Set consists of gum rubber funnel adaptor to fit any standard bottle neck. A rigid shoulder extending from the lip to the bottom of the funnel allows air intake to insure a steady flow of the solution. The funnel is equipped with 40 inches of clear plastic tubing which permits operator to observe flow of solution in order to guard against passage of air bubbles into the blood stream with the medication. The tubing is of special consistency to permit use under cold weather conditions. The set is equipped with stainless 14 gauge 1¾ inch needle.

Price: Set complete as described above. **\$2.35**, postage extra. Extra needles, **40c** each, postage extra.

C-D-M SOLUTION

A sterile injectable solution for the treatment of Calcium or Magnesium deficiency diseases, such as **milk fever, green wheat poisoning, grass tetany, rickets, and eclampsia.**

Franklin C-D-M Solution contains the **active ingredients** (minimum): Calcium Gluconate, 23.00%; Dextrose, 5.00%; Magnesium Gluconate, 2.00%.

A lowered blood magnesium level is associated with conditions known as **grass tetany** or **green wheat poisoning** experienced when cattle or sheep are grazed on rapidly growing grass and wheat. Therefore, a need for the Magnesium Gluconate content of this product is indicated in such instances.

Calcium deficiency in livestock is widespread and a cause of considerable loss. Muscular spasms and increased irritability and nervousness, followed by complete paralysis, loss of consciousness, and death are symptomatic.

Administer C-D-M by (1) intraperitoneal, (2) intravenous, or (3) intramuscular injection.

Dosage: Cattle, 250 to 500 cc. by any of the three methods; Sheep & goats, 50 to 100 cc. by methods (1) or (3); Swine, 50 to 100 cc. by methods (1) or (3); Horses, 250 to 500 cc. by methods (2) or (3).

Complete instructions for use with each bottle. Follow directions carefully.

Prices: 250-cc bottle, \$1.80; 500-cc bottle, \$2.65. Postage extra.

DEXTROSE SOLUTION

A sterile injectable solution providing a readily assimilable form of carbohydrate for treating **heat stroke, shock, intestinal stasis, acetone** (abnormal acetone production sometimes accompanying milk fever), and to supply nourishment or to counteract dehydration in acute diseases.

Contains approximately 50% (weight to volume) Dextrose C.P. Anhydrous.

Administer by intraperitoneal, intravenous, or intramuscular injection. See directions.

Dosage: Large animals, 100 to 250 cc; Swine, 25 to 100 cc; Sheep, 10 to 50 cc; Dogs, 10 to 50 cc., depending on weight.

Prices: 250-cc bottle, \$1.65; 500-cc bottle, \$2.40. Postage extra.



6% SODIUM IODIDE SOLUTION

A sterile injectable solution for the treatment of Actinomyces bovis and Actinobacillus lignierii infections in cattle, commonly known as "**lumpy jaw**" and "**wooden tongue.**"

Surgical treatment may be necessary in the presence of large abscesses in soft tissue lesions, or of bone lesions, followed by local application of tincture of iodine to supplement injections of Sodium Iodide Solution. Simultaneous injections of Penicillin-Dihydrostreptomycin Solution should be beneficial.

Because stronger solutions may cause rapid development of acute iodism condition, before symptoms are noticed in time to stop treatment, we favor 6% solution for use by other than veterinarians.

Do not give to pregnant animals.

Dosage: 500 cc. for 1000-pound animals; smaller or larger doses in proportion to weight of animals.

Price: 500-cc bottle, \$3.65. Postage extra.

SODIUM CACODYLATE SOLUTION

A sterile solution for use as an aid in treating bovine **anaplasmosis**; may also be beneficial in treating cattle and horses for chronic **eczema**, secondary **anemia**, and **debilitation.**



Dosage: For anaplasmosis, a maximum initial dose of 40 cc., followed at 24 to 36-hour intervals with 20 cc. doses until 4 to 6 doses are given. For chronic eczema, secondary anemia, or debilitation: Horses, 10 to 15 cc.; cattle, 10 to 20 cc. Repeat at 2 or 3-day intervals if necessary. **Administer** by intravenous injection, preferably; or may be injected intramuscularly if precautions taken.

Price: 125-cc vial, \$5.00. Less in quantities. Postage extra.

Consult Reference Chart (page 41 to 48) for instructions on how to make various types of injections. For Intravenous sets, see Page 22.

VITAMIN DEFICIENCY

Vitamin A deficiency is recognized as one of the more important nutritional problems of livestock. Present findings indicate that natural sources of vitamin A may not be sufficient to provide adequate needs to prevent marginal deficiencies.

Livestock obtain their vitamin A requirements from carotene contained in green feeds. When green feed is plentiful, there is little danger from vitamin A deficiency, but in periods of drouth or prolonged feeding of dry, bleached hay, marginal or acute deficiencies may develop.

Vitamin A is important to at least three functions of the animal body: (1) It is necessary for normal maintenance of the epithelium which lines the alimentary tract, respiratory tract, and skin, and considered as the first line of defense against infection. If not in healthy condition, the animal's resistance to disease is lowered. (2) It is essential to normal reproduction. Marginal or acute deficiency may result in poor conception rates or birth of weak calves subject to scours and respiratory diseases. (3) It is essential to normal vision. Deficiency may result in night blindness and in increased incidence of eye infections.

Acute or borderline deficiency may have an adverse effect on the total performance of feedlot or range livestock.

Vitamin A deficiency may be overcome by providing synthetic vitamin A in the feed and water. Intramuscular or intraruminal injections of vitamin A provide a means of quickly overcoming the deficiency. Recent research indicates that large intraruminal doses provide high blood levels and high liver storage. This liver storage, in turn, is adequate to supply the body needs for several months.

Stockmen are using vitamin A injections to: (1) Provide cows with adequate vitamin A levels prior to breeding to insure good conception. (2) Provide feedlot cattle with adequate supplies of vitamin A as they enter the feedlot. (3) Aid in combatting stress of shipping, weaning, and disease. (4) Provide newborn calves with adequate vitamin A levels by injecting the calf at birth or the cow prior to calving. (5) Supplement specific treatment of infections, to aid in overcoming stress and provide vitamin A when deficiency may be suspected as being a contributing cause.

Symptoms of vitamin A deficiency include: Night blindness with excessive watering of

the eyes; abortion, or birth of weak offspring; thin or watery diarrhea; reduced gains; nervous disorders, including muscular spasms or convulsions. Marginal vitamin A deficiency may include: Rough hair coat; dry, flaky skin; "shy breeding." Evaluation of symptoms should include feed conditions that might contribute to vitamin A deficiency.

Vitamin D deficiency is not generally considered too much of a problem, except under unusual conditions. Vitamin D is obtained by animals from sunlight and from sun-cured feeds. Normally, they will obtain adequate supplies from natural sources. **Symptoms** of vitamin D deficiency include: Rickets in young animals; poor skeletal development; poor growth or feed utilization.

VITAMIN A - D - E EMULSIFIABLE SOLUTION

A modified vegetable oil solution, each cc. containing 500,000 I.U. vitamin A; 75,000 I.U. vitamin D₂; and 50 I.U. vitamin E for intramuscular or intraruminal injection. The solution emulsifies in presence of body tissue fluids and is rapidly absorbed for more complete utilization.

Cattle: For calves, $\frac{1}{2}$ to 1 cc.; yearlings, 1 to 2 cc.; breeding stock, 3 to 6 cc.

Sheep: For lambs, $\frac{1}{4}$ to $\frac{1}{2}$ cc.; fattening lambs, $\frac{1}{2}$ to 1 cc.; breeding stock, 1 to 2 cc.

Swine: For weaning pigs, $\frac{1}{4}$ to $\frac{1}{2}$ cc.; growing pigs, $\frac{1}{2}$ to 1 cc.; breeding stock, 1 to 3 cc.

Horses: For colts, $\frac{1}{2}$ to 2 cc.; yearlings, 2 to 4 cc.; mature horses, 4 to 6 cc.

Prices: 30-cc vial, **\$9.75**; 100-cc vial, **\$21.00**.

VITAMIN A INJECTABLE SOLUTION

A sterile vegetable oil solution containing 100,000 I.U. vitamin A per cc. for intramuscular or intraruminal injection.

Dosage: For **prevention** of vitamin A deficiency in large cattle, horses, sheep, and swine, inject $\frac{1}{2}$ cc. to 1 cc. per 100 pounds of body weight; in calves, colts, lambs, and pigs, inject $\frac{1}{2}$ cc. to 1 cc. For **treatment** of vitamin A deficiency, double or triple the above dose.

Prices: 10-cc vial, **\$1.50**; 100-cc vial, **\$5.50**; 250-cc vial, **\$9.40**. Postage extra.

USE OF SULFONAMIDES

Sulfonamides have proven extremely useful in the treatment of a large number of live-stock diseases, particularly those of cattle. Many infectious organisms, formerly resistant to treatment, are sensitive to sulfonamide medication. In many cases, the prompt use of sulfas results in dramatic response. Many sulfonamides are available to stockmen today. Each has some specificity of action claimed for it and may have some especial value in the treatment of certain infections. Some are limited in their action toward a variety of organisms or in their absorption or distribution throughout the system.

Sulfonamides act as bacteriostatic agents, interfering with the multiplication of infectious organisms to provide an opportunity for body defense forces to mobilize and to overcome them. Therefore, it is advantageous to treat promptly, using large doses to develop a high blood level of sulfonamides and to maintain this blood level by means of subsequent doses. Intravenous or intraperitoneal injections of sodium salts of sulfonamides are often used to establish quick, high blood levels which may be maintained by oral administration of the medication in bolus form. High blood levels produced by a sulfonamide are not necessarily a measure of the efficacy of the treatment. The absorptive and distributive qualities of a sulfa throughout the body tissues may be of greater effectiveness in the treatment of certain diseases.

General practices in use of sulfonamides are as follows:

1. The use of sulfonamides alone should not constitute the sole treatment of any disease. Usual good management practices and symptomatic treatment should also be employed.

2. Sulfonamides are indicated to treat any disease where the causative organism is known to be sensitive to the sulfonamide. Or, they may be indicated in diseases caused by non-sensitive organisms or viruses for the value they may have against susceptible secondary bacterial invaders.

3. Ample water should be provided for the patient to avoid dehydration and to assist in excreting sulfonamides from the system to avoid possible blocking of the kidneys. Water should be forced if necessary.

4. Administration of sulfonamides should be employed for the minimum time necessary, during a maximum period of 4 days. Dosage should be large during the first 24 hours, followed by smaller maintenance doses. Medication should be stopped 24 to 36 hours following improvement of the patient, or at the end of the 4-day period, whichever may be shorter.

5. Although toxic reaction of livestock, particularly ruminants, to sulfonamides is slight when properly used, signs of toxicity (bloody or frequent urination) should be watched for and administration stopped if evident. Large quantities of water should then be given, forcing if necessary.

Advantages of sulfa combinations: The use of triple combinations of sulfonamides over single sulfas is increasing. Experiments demonstrate that sulfonamide mixtures have greater antibacterial action than equal weights of any of the single sulfonamides used in the combination. Following administration of combinations, blood levels have been shown to be distinctly higher than expected from mathematical calculations based on the value for single sulfas. A combination of three sulfonamides is significantly less toxic than any of the separate constituents or any combination of two of them in equal dose.

Sulfonamide-Antibiotic combinations: The simultaneous use of triple combinations of sulfonamides with antibiotics offers advantages in treating acute infections. Sulfonamides and antibiotics work toward the same goal—inhibiting disease-causing bacteria—in slightly different ways. Experiments and actual field use indicate that each supplements the other in its effect on bacteria. The addition of penicillin to treatment with triple sulfas not only increases the antibacterial range of effectiveness, but the potency as well.

Most acute infections involving livestock may be due to several organisms, either as the cause or as a complicating factor, and may be difficult to diagnose accurately in the field. For this reason, the simultaneous use of triple sulfas with a penicillin-streptomycin combination solution is well-regarded, because the combination is effective against almost all the livestock disease-causing organisms that are susceptible to sulfonamide or antibiotic medication.

FRANKLIN TRI-SULFA

Franklin Tri-Sulfa Boluses and Tri-Sulfa Solution provide two sulfonamide combinations, each well suited for treatment of many diseases of large animals. Each sulfonamide in either formula is credited with having specific qualities of value in treating livestock infections. The combined use of sulfonamides is considered to provide widest antibacterial activity against organisms, involved in common infections of livestock, that may be sensitive to sulfonamide treatment.

Among those bacterial infections susceptible to treatment with Franklin Tri-Sulfa are: **Calf diphtheria and pneumonia, hemorrhagic septicemia** (shipping fever), **necrophorus infections** (foot-rot, necrotic laryngitis), **septicemia** associated with metritis and mastitis, **coccidiosis** in cattle and sheep, **infectious calf scours**, and **pasteurella pneumonia and necrophorus enteritis** in swine.

Dosage: In most cases the initial dose will be 1 to 1½ grains per pound of body weight, although in some acute cases this may be increased to 2 grains per pound. This maximum initial dose proves to be sufficient in many cases; however, subsequent maintenance doses consisting of ½ the initial dose may, if required, be given at 12 to 24 hour intervals.

FRANKLIN TRI-SULFA SOLUTION, Veterinary,



is an injectable solution, each 100 cc containing:
Sulfamethazine sodium.....7.50 gm.
Sulfathiazole sodium.....3.75 gm.
Sulfamerazine sodium.....1.25 gm.
For administration by intravenous (very slowly) or intraperitoneal injection. Each ½ cc contains 1 grain of the combined sulfonamides.

Prices: 250-cc vial, \$3.50;
500-cc vial, \$6.50.

FRANKLIN TRI-SULFA BOLUSES, Veterinary, for administration by mouth with a balling gun and iron. Each bolus is comprised of 50% Sulfathiazole, 40% Sulfamethazine, and 10% Sulfamerazine.

Box of 6—240 grain boluses.....\$ 6.00
Box of 25—240 grain boluses..... 22.00
Box of 25— 60 grain boluses..... 6.00
Box of 100— 60 grain boluses..... 22.00

Postage extra.

Liquid TRI-SULFA NS

A triple sulfonamide solution for use in treating certain bacterial infections. Administer in drinking water; as a drench when diluted; or by intraruminal injection. Each fluid ounce contains:

Sulfamethazine sodium 35.00 gr.
Sulfathiazole sodium 17.50 gr.
Sulfamerazine sodium 5.75 gr.

Generally, the initial dose should be 1 to 1½ grains sulfonamides per pound of body weight (1 to 1½ fluid ounces per 60 pounds). Subsequent maintenance doses of one-half the initial

dose may be given every 12 hours for a period of 3 or 4 days (see directions).

As the sole source of **drinking water** for cattle, sheep, and swine, mix 2 fluid ounces Tri-Sulfa NS in each gallon of drinking water for the first day, and 1 fluid ounce per gallon for the next 2 or 3 days. Treat severely ill animals individually; then follow with drinking water treatment.

Intraruminal injection: Inject directly into rumen (paunch) 1 fluid ounce per 60 pounds of body weight. See page 21.

As a drench: Mix 1 fluid ounce per 60 pounds of body weight with 1 quart of water for large animals, and with 1 pint of water for small animals.

Price: 16 oz., \$3.50; 128 oz., \$17.50. Postage Extra.

SULFAPYRIDINE

Primarily effective in the treatment of acute Spherophorus necrophorus infections (calf diphtheria, foul-foot, etc.) in animals. Also considered to be of value in treatment of calf pneumonia. Available in bolus form as illustrated.



Dosage

Large Animals: Initial dose of 1 grain per pound of body weight, followed by doses of approximately ½ grain per pound of body weight at 12-hour intervals for three or four days.

Sulfapyridine Boluses

25 - 240 grain bolus.....\$22.00

Price shown is postage extra.

Reports of Clostridium Perfringens infections are becoming quite prevalent in Western Canada. For more information on this disease see page 10 of this catalog.

FOOT ROT OF CATTLE

Foot rot is a common disease of cattle, found almost everywhere, but more prevalent in feed-lot cattle, dairy herds, purebred herds, or where cattle are closely pastured. One animal or a group may be affected.

Spherophorus necrophorus (*Actinomyces necrophorus*) is the organism generally considered as the primary cause of the infection. This germ is Gram-negative, anaerobic organism commonly found in the soil. It is often found in liver abscesses and is considered as the primary infective agent in calf diphtheria. Other bacteria may also be involved.

S. necrophorus requires a break in healthy skin to gain entrance and cause an infection. Wounds on the feet of cattle, caused by sharp stones; nails; sharp stubble; frozen ground are factors. Elimination of such conditions, and drainage of areas where cattle congregate are helpful.

Treatment: The best treatment of foot rot should consist of the following steps:

Examine the hoof thoroughly, removing any foreign objects.

Cleanse the foot, trim the hooves, and remove dirt and necrosed tissue. Hydrogen peroxide is excellent for removing pus and debris.

Apply a penetrating antiseptic, such as Franklin **Foot Rot Treatment**, to the wound.

Administer sulfonamides or antibiotics, either parenterally or orally. Franklin **Tri-Sulfa** administered orally (Boluses or Liquid Tri-Sulfa NS); Intraperitoneally or intravenously (**Tri-Sulfa Solution**); in the drinking water (**Tri-Sulfa NS**); or by intraruminal injection (**Tri-Sulfa NS**); all give good results.

Franklin **Penicillin-Dihydrostreptomycin** Solution administered by intramuscular injection, is also effective. Penicillin alone may be effective against secondary infections, but does not give uniform results as *S. necrophorus* is resistant to it. However, Penicillin-Dihydrostreptomycin acts against both Gram-negative and Gram-positive bacteria.

Place affected animals in clean pasture or fresh-bedded stalls until wounds heal.

Under many conditions, all phases of treatment may not be possible; however, it is important to employ as many control measures as you can.

CALF DIPHTHERIA

Calf Diphtheria (necrotic laryngitis) is a common, highly infectious disease of young calves. The causative organism is considered to be *Spherophorus necrophorus*, a gram-negative, anaerobic organism, widely distributed in nature and generally associated with filth and unsanitary conditions. *Sph. necrophorus* causes infections known under the general term of necrobacillosis, including foot rot of cattle, sheep, and hogs; necrotic stomatitis of hogs and sheep; bull-nose of pigs; necrotic hepatitis (liver rot) of cattle.

Infection enters through abrasions of the mucous membranes of the mouth, tongue, gums, or throat. The tender tissues of very young calves are easily damaged. Older animals may become infected through injuries caused by sharp-awned grasses.

Symptoms: First symptoms noted, in the young calf, are difficulty in nursing; salivation; swellings in cheek and throat; protrusion of the tongue; rapid respiration; nasal discharge; coughing. Emaciation and dehydration progress as the infection develops. The course of infection is rapid, death resulting from pneumonia and toxemia.

Ulcers, yellowish and surrounded by a raw, reddened area with a cheesy mass in the center, may develop on the tongue, gums, and cheeks. A disagreeable odor is noted. Older animals may be noticed standing before a water trough without drinking, or with hay or feed hanging from the mouth, indicating a desire to eat or drink, but unable to do so because of the pain involved.

Prevention and treatment: Prevention is largely a matter of management, as no means of immunization against *Sph. necrophorus* is known. Sanitary measures should be observed. Feed that may cause injuries to membranes should be avoided.

Due to the rapid course of the disease, treatment should be instituted as quickly as possible to clear up existing infection and avoid complications. *Necrophorus* infections generally respond quickly to treatment by Sulfapyridine, Tri-Sulfa, or Penicillin-Dihydrostreptomycin. A combination of one of these sulfonamides with the Penicillin-Dihydrostreptomycin solution usually offers quicker response and helps to avoid complicating infections. The strength of the very young calf should be maintained and dehydration avoided by supplementing treatment with liquids and nourishing gruels.

MASTITIS AND ITS CONTROL

Bovine mastitis, generally defined as an inflammation of the udder, is probably the most costly disease problem the dairyman has to face. Losses due to milk condemnation, shortened milk production, damaged udders rendering cows unfit for production, occasional death loss of valuable cows, loss of feed to unproductive or affected cows, and costs of treating the disease amount to an enormous sum.

Udder inflammation may sometimes be sterile, responding to treatment rapidly without serious damage to the udder. More often, however, the udder becomes infected and requires more careful treatment to avoid serious damage to the udder tissues, which may result in loss of milk production.

Due to the wide range of predisposing factors and the many infectious organisms that may be involved in mastitis, it should be considered as a disease complex rather than a specific entity. Control measures should take this into consideration and should be aimed at correction of faulty managerial practices, determination of the bacteria responsible for the infection if possible, and selection of the treatment best suited to cope with the particular infectious organism involved.

Predisposing factors: The main predisposing factor to mastitis is often considered to be injury to the teats and udder, which offer excellent sites of infection for disease germs which are commonly found on premises where dairy cattle are handled. The bovine udder is a comparatively delicate organ, made up of many small tissues and sacs which make the entire organ similar to a sponge. Any damage, internal or external, which may tear this spongy tissue, offers an excellent chance for infection.

Milking practices may predispose infection. Incomplete milking is thought to provide a favorable environment to bacterial growth. Lack of sanitation during milking may introduce infectious bacteria to the udder. Improper milking, either by hand or machine, may cause damage to teats and udder.

The cow, herself, may predispose mastitis. Excessively large udders may be subject to many injuries. Heredity, state of lactation, season and weather, age of the cow, and size of the cowherd may all have some part in the incidence of mastitis in the herd, and should

be taken into consideration in planning control.

Causative bacteria: The streptococci are considered to account for approximately 90% of all mastitis infections. *Streptococcus agalactiae* is considered to be the most common of this group. Others are *Streptococcus dysgalactiae*, *Streptococcus uberis*, and *Streptococcus pyogenes*.

Staphylococci are considered to be the next most important group of organisms, following the streptococci. Coliform organisms (*E. coli*, *A. areogenes*, etc.), *Corynebacteria pyogenes*, *Pasteurella multocida*, *Salmonella enteritidis* and others may be involved.

It is generally considered that the streptococci and staphylococci account for most of the herd outbreaks of mastitis, with the other bacteria primarily involved in sporadic cases among individual animals. All of the germs associated with mastitis are commonly found under conditions in which dairy cattle are handled.

Symptoms of mastitis: Mastitis may be classified according to the symptoms. Mild mastitis may show symptoms of abnormal milk secretions, possibly with fever and swelling of the affected quarter. Acute mastitis is indicated by a hot, swollen, and possibly caked udder. The milk may be watery, blood-streaked, may contain pus, and often is scanty in quantity. The udder is feverish and swollen; body temperature is often above normal. Septic mastitis generally exhibits the symptoms of acute mastitis, but the infection is generalized. The cow is depressed, may have intermittent chills and high fever, little or no appetite, and is often unable to stand. Chronic mastitis is most often characterized by intermittent flare-ups of acute symptoms with the severity varying.

Control measures: Control measures should be aimed at eliminating as many of the predisposing and infective factors as possible, as well as prompt treatment of all suspected cases of mastitis.

Sanitation should include elimination of sources of infection from the premises, and guarding against transmission of infection to the cow. Good management practices include elimination of injuries to teats and udders as much as possible, and maintenance of conditions of cows by good feeding and nutritional practices.

TREATMENT OF MASTITIS

Antibiotics and sulfonamides have proved to be of great value in the treatment of mastitis. To gain the fullest benefit from their use, however, the operator should take into consideration the basic factors of the mastitis complex. The following suggestions will help to obtain the best results in the treatment of the disease:

1) Early detection of mastitis and prompt treatment is essential. The dairyman should be on the alert for mastitis danger signals and treat promptly.

2) Determination, if at all possible, of the species of bacteria causing infection and selection of the best treatment for the specific organism. This can be done only by laboratory examination, as clinical symptoms cannot be depended upon.

3) No case of mastitis can be considered to be under control unless bacteriological examination shows the udder to be free from causative bacteria three weeks after completion of treatment.

4) Accordingly, every case of mastitis should be treated by multiple infusions with the treatment of choice, consisting of four to six infusions regardless of the treatment used. One infusion may result in disappearance of acute symptoms, but multiple infusions will aid in avoiding development of chronic mastitis.

5) Use of supplemental treatment of udder in cases of generalized infection (septic mastitis) is indicated. Franklin Tri-Sulfa Solution or Tri-Sulfa Boluses; Procaine Penicillin G in oil or in aqueous suspension; or Procaine Penicillin G in Dihydrostreptomycin Solution are valuable for this purpose.

6) Massage of the infected quarter following infusion is essential to thoroughly distribute the medication throughout the tissues and to reduce swelling. Franklin Udder-Eze, containing counterirritants, is an excellent massage lubricant.

7) Chronic mastitis may be treated either during lactating or dry periods. It may be advantageous to milk out only once a day to permit longer activity of the drugs. Treatment during dry period may be more effective, particularly in cases of staphylococcal infection.

FRANKLIN PENSTREPCIN PLUS Mastitis Infusion Ointment

A superior product for use as an aid in treating acute or chronic mastitis which may be attributed to these most common causes—streptococci, staphylococci, coliform, and pseudomonas organisms.

Packaged in convenient-to-use 12-cc disposable plastic syringe, each containing 100,000 I.U. Procaine penicillin; 250 mg. Dihydrostreptomycin (as sulfate); 50 mg. Neomycin (as sulfate); 500 mg. Sulfisoxazole; 20 mg. Hydrocortisone acetate; and 5 mg. Cobalt sulfate suspended in peanut oil containing 3% Aluminum monostearate. The contents of each syringe recommended as one treatment for one quarter. **Price:** Per syringe, **\$1.35**; less in quantities. Postage extra.

U.S. Patent #2,778,704.

FRANKLIN PENSTREPCIN OINTMENT

A combination of effective antibiotics and sulfonamides in a special free-flowing base, for use as an aid in treating those cases of mastitis caused by streptococci, coliform bacteria, and staphylococci. Each 10 cc. of **Penstrepcin Ointment** contains 100,000 I.U. Procaine Penicillin G; 200 mg. Dihydrostreptomycin base; 500 mg. Sulfanilamide NF; 500 mg. Sulfathiazole NF; 50 mg. Papain USP. The special base used provides free-flowing action through a wide range of temperature. Since a large percentage of mastitis cases are caused by streptococci, **Penstrepcin Ointment** provides an effective and economical treatment.

Packaged in collapsible **tube** or in disposable plastic **syringe**.

Prices: Per tube, **85c**; less in quantities. Per syringe, **\$1.00**; less in quantities. All prices postage extra.

Important: Milk from treated dairy animals must not be used for human consumption within 72 hours after last treatment.

PROPER CARE OF COWS' UDDERS PAYS DIVIDENDS

Proper care of cows' udders is one of the most important steps in good dairy management. A program of periodic examination and treatment should be carried out. Daily use of a reliable ointment and massage will greatly reduce the frequency of chapped, cracked teats, thus eliminating a possible contributing factor to udder ailments of more serious nature. In the program followed, one of the steps should be to frequently check each animal for possible presence of mastitis condition. In this procedure, the use of Mastitis Test Blotters makes the operation quick and accurate. In cases of serious udder ailments, the services of a veterinarian should be employed.

FRANKLIN CHAP OINTMENT

Franklin Chap Ointment is especially designed for daily use to keep the teats and udders of dairy cows soft and pliable, and free from chaps, cracks, and other sores. It is an antiseptic, soothing, protective ointment in Lanolin and Petrolatum base, and because it does not impart odor or taste to milk, it may be used regularly after each milking.

Franklin Chap Ointment is also suggested for use as a protective dressing against chapping and sunburn prior to exposure, and as a dressing to relieve discomfort due to these conditions following unprotected exposure.

Price: 8-ounce tin, **\$1.40**. Postage extra.

FRANKLIN UDDER-EZE

Franklin Udder-Eze is particularly adapted for use in massaging of udders to relieve minor congestions which may be present following calving, as it possesses stimulative, soothing, protective, and antiseptic qualities. The use of hot packs in connection with application of Udder-Eze and massage will increase the effectiveness of treatment. Franklin Udder-Eze is of equal value as an emollient and counter-irritant for the treatment of chaps, cracks, and minor skin irritations; also strains and muscular soreness due to over-exertion or fatigue.

Prices: 8-ounce tin, **\$1.35**; 30-ounce tin, **\$3.60**; 128-ounce can, **\$9.00**. Postage extra.

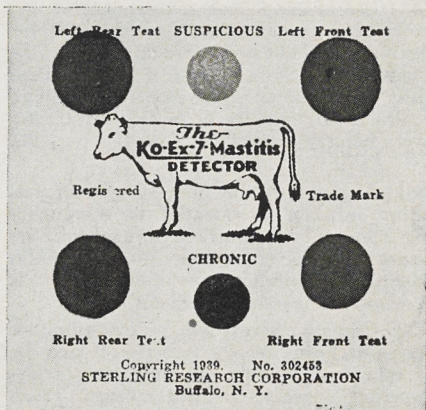
WAX TEAT DILATORS

For use in keeping the teat canals of cows open, following the removal of obstructions, closures due to irritations, sores at opening of the canal; and as an aid in enlarging the teat canals of "hard milkers." Dilator should be left in teat until the next milking. Continue use until the condition is relieved.

Prices: Envelope of 25 Dilators **\$1.00**; Box of 100 Dilators, **\$2.75**. Postage extra.

MASTITIS TEST BLOTTERS

Mastitis Test Blotters provide a quick, effective means of detecting infected cows in the herd. Keep a supply on hand at all times and frequently test all cows in the milking herd.



KO-EX 7 Brom Thymol Mastitis Detectors with the green spots and guide on each card. **Price:** Box of 50, **\$1.65**. Postage extra.

INFECTIOUS KERATITIS

Commonly Called "Pinkeye" in Cattle

Pinkeye is considered to be due to a variety of causes or predisposing factors. Any initial irritation to the eye may give rise to typical symptoms of pinkeye. Weed pollen, nutritional deficiencies, bright sunlight, snow glare, injuries due to dust, weeds, grass or other foreign objects may cause irritation to the eye and be complicated by various bacteria. *Corynebacteria*, streptococci, staphylococci, *Pasteurella* organisms, and other bacteria have been isolated from the eyes of affected cattle. Whether these germs cause the primary infection or are present as secondary invaders is not known.

Recent investigations indicate that vitamin A deficiency predisposes eye disorders and may contribute to high incidence of "pink-eye" symptoms in cattle. Night blindness, excessive lacrimation, cloudy cornea, swelling around the eyes, and impaired vision are symptoms of vitamin A deficiency. Under conditions contributing to vitamin A deficiency (see page 24), consideration should be given to this factor. Under such conditions, the use of an injectable vitamin A solution (see Franklin Vitamin A-D-E Emulsifiable Solution, page 24) should be considered to supplement more specific local treatment.

Symptoms of pinkeye include a sensitivity to bright sunlight with swelling and redness of the eyelids. Tears flow freely, often causing a matting of the hair around the eyes. Lesions may appear on the cornea a few days following the appearance of symptoms. The cornea generally becomes milky in appearance. Ulceration may develop, causing permanent blindness.

Pinkeye may spread rapidly throughout a herd, when infection is involved.

Control of Pinkeye: No specific control measures can give complete protection against the condition. Control should be directed at maintaining the general well-being of the animals. The diet should be well-balanced as far as may be practical, using feeds or supplements containing vitamins and minerals; provision should be made for adequate water; fly control measures should be carried out during summer months; and perform constant and close inspection of the herd, removing and isolating all cases of pinkeye which may develop.

In the past, control by vaccination has not been uniformly successful in every case.

Mixed bacterins containing streptococci, staphylococci, *Corynebacteria*, and *Pasteurella* organisms (see below) have been widely used with generally good results in developing resistance against these organisms, which may act as secondary invaders to an initial irritation. When mixed bacterin is used, best results will be obtained from a series of injections.

Winter Pinkeye: Sun glare from snow and ice sometimes affects cattle with light pigmented skin surrounding the eyes. Some stockmen have used Franklin's black Sheep Branding Paint, Tattoo Ink, or Marking Crayon to blacken the area around the eyes to absorb sun rays. This practice is reported to give a measure of relief. In late winter and early spring, vitamin A added to the ration may be helpful, or periodic injections of vitamin A may be used to overcome the deficiency.

FRANKLIN MIXED BACTERIN

(Bovine) Formula 1

Consists of chemically-killed bacteria of the following named organisms produced by the washed culture method:

(Bovine) Formula 1



Pasteurella multocida,
Types I, II, and III...50%
Corynebacterium (including *C. pyogenes* 15%)...30%
Streptococcus (pyogenic).....10%
Staphylococcus albus
and *aureus* (5% each) .10%

Uses: As an aid in preventing conditions attributed to the organisms named in the formula.

Dosage: For healthy animals, 2 cc. Using aseptic precautions, inject under the skin prior to the season when such infections may occur.

A second dose, double or more, in 3 to 4 days should increase the initial effect.

Prices: 10-dose (20-cc) vial, \$1.35; 50-dose vial, \$6.25. Quantity prices on request.

Please refer to page 32 for additional information regarding treatment of pink-eye, and medicated products for local application.

TREATMENT OF PINKEYE

Effective control of pinkeye has for many years presented a problem to stockmen which has been difficult to overcome. As stated in the discussion of infectious keratitis (pinkeye) on page 31, the non-specific nature of the disease has made preventive measures decidedly unpredictable. Regardless of the exciting cause, there are certain elements which should be taken into consideration in treating the condition: (1) to inhibit bacterial infection, either primary or secondary, by the use of drugs, and (2) to cleanse and soothe the affected eye and protect, if possible, from further irritation.

Franklin offers two excellent products, one a liquid and the other in powder form, for treating pinkeye condition. Active ingredients of the powder form mix readily with the fluids of the eye to provide longer-lasting effect. The liquid form includes active ingredients, such as urea, which are not suited for use in powder form but provide a desirable action in cleansing and soothing the eye. Either product may be used with confidence to gain the desired results, and each serves the additional purpose of an excellent treatment for minor wounds of livestock.

AEROSOL PINKEYE SPRAY AND WOUND DRESSING

An **antiseptic** and **fungicidal** solution, with local **anesthetic** action, for treating **eye infections** of cattle and sheep; and for use as a topical dressing for **minor wounds** of all livestock.

Methyl violet contained in the formula is valuable as an antiseptic, as well as to stain tissues around the eyes to protect from sunlight and further irritation.

This product is packaged in an **aerosol** container for ease of application.

Price: 6-ounce bomb, **\$2.50**; less in quantities. Postage extra.

FRANKLIN PINKEYE SPRAY AND WOUND DRESSING

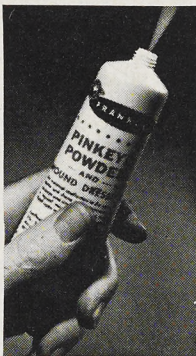
A liquid for use in treating those minor irritations of the eyes of livestock commonly known as "**pinkeye**" and for treating **minor wounds** of livestock. It has been formulated, as nearly as possible, to provide the essentials for treatment of eye infections.

Price: Flexible plastic spray bottle containing 80-cc liquid, **\$2.25**. Less in quantities. Postage extra.

Vitamin A deficiency often contributes to eye infections. Refer to page 24 for helpful information.

FRANKLIN PINKEYE POWDER

A powder for use in the treatment of those minor irritations of the eyes of livestock commonly known as



"pinkeye" and for treating minor wounds of livestock. The formula consists of 100% active ingredients which have been found to be of value in treating such infections, as follows:

Acriflavine Hydrochloride is used for its value as an inhibitor of bacterial growth, and for its penetrating and long-lasting effect.

Calomel is considered to be useful in the treatment of corneal ulcers which are so often an after-effect of pinkeye.

Sulfathiazole is used for its bacteriostatic effect on streptococcic and staphylococcic organisms.

Sulfanilamide for its bacteriostatic effect on streptococcic and staphylococcic organisms.

Boric Acid is of value as an antiseptic and exerts a definite soothing action on mucous membranes.

Finely ground in special process to eliminate larger particles which might be a source of irritation.

Price: 1-ounce in flexible plastic puffer container for ease of administration, **\$1.50**. Less in quantities. Postage extra.

INFECTIOUS CALF SCOURS

Infectious calf scours, sometimes called White Scours, is a highly infectious disease of young calves. The infection could more properly be called a disease complex resulting from an interplay between bacteria, nutrition, and environment.

The infection is primarily concerned with very young calves, frequently less than 48 hours old, and generally less than 5 days old. In severe outbreaks the disease may spread to older calves. In some rare cases the infection may be present at birth.

Symptoms vary somewhat in individual cases. At birth, the calf may appear normal or occasionally it may be weak and have a dull, listless appearance. Usually within 48 to 72 hours a profuse yellowish-white diarrhea develops. Color of the feces gradually changes to a brownish tint, frequently streaked with blood. Affected calves have a tendency to sleep much of the time. Appetite is poor. Pneumonia frequently develops and in many cases is the actual cause of death.

Causative Factors: Infectious white scours is more common among stabled animals born during the winter and spring months. Condition of the cow and the environment in which the calf is born seem to be important factors in the incidence of the disease. Calves born of weak, undernourished cows during extremely wet or cold weather conditions, in unsanitary barns or stables seem to be particularly susceptible to infection.

The infectious organism most commonly believed to be responsible for the majority of cases of infection is *Escherichia coli*, which is present wherever cattle are raised. This germ is a normal inhabitant of the intestinal tract of livestock, but is comparatively harmless except in newborn animals. During an outbreak it may become highly pathogenic and cause infection in older, more resistant animals.

Other infective bacteria considered to be factors in infectious white scours are *Salmonella enteritidis* and *Aerobacter aerogenes*. *Pasteurella multocida* may be involved as a secondary invader.

Vitamin deficiency may be a factor in predisposing infection, as may mineral deficiencies.

Control and Prevention: As with all diseases, preventive measures offer the greatest economy. In controlling infectious scours, it is essential that the cow be provided with ample nutritious feed which is supplemented with minerals to provide the calf with a strong start. Sanitation is of the greatest importance. The calf should be provided with clean, dry, and warm quarters if at all possible. It should receive the colostrum milk from the cow for the benefits it provides. Overfeeding should be avoided. Disinfection of pails and feeding utensils should be practiced.

Vaccination of the calf, using a bacterin containing the killed organisms that are generally associated with infectious calf scours, may build resistance against the infection. Due to the time factor involved, vaccination should be done within hours following the birth of the calf. A second dose of the bacterin in 3 days should increase the initial effect. In the event of a severe outbreak, it may be advisable to vaccinate older calves in the group as well. In addition to the above, vaccination of the cow approximately one month before calving and a second time two weeks later is generally considered to be good practice because antibodies developed in the cow from such vaccination are believed to be transmitted to the calf in the colostrum milk.

Treatment of infectious scours should consist of four elements: (1) Remove offending material from the bowels by use of castor oil or other purgative; (2) inhibit growth of infectious bacteria by use of sulfonamides and antibiotics; (3) treat the irritated membranes of the digestive tract with suitable astringents; and (4) maintain the strength of the calf and avoid dehydration by feeding small amounts of nourishing gruels of oatmeal, linseed or barley meal, raw eggs, milk at frequent intervals. Force feed if necessary.

Simultaneous oral use of a triple-sulfa formula (of sulfonamides selected for their efficacy toward organisms involved in the infection) and penicillin-dihydrostreptomycin intramuscular injections, offer as wide and potent an antibacterial effect against sensitive organisms as is possible to obtain.

Since the course of the infection is rapid, **prompt and full treatment** is essential for best results.

BACTERIAL SCOUR BOLUSES

Franklin Bacterial Scour Boluses are formulated to provide both systemic and local bacterial inhibiting effect in the gut to those organisms commonly involved in bacterial scours and enteritis, and secondary bacterial respiratory infection in young livestock.



Each bolus contains 50 grains **Sulfamethazine** and 200 milligrams **Neomycin** Base (as the sulfate).

Inert ingredients include **Activated Attapulgite**.

Neomycin is slowly absorbed from the gut, providing prolonged action.

Sulfamethazine exerts its effect in the gut on sensitive bacteria and then is absorbed to provide systemic action against secondary bacterial infection. Attapulgite aids in absorbing bacteria and toxic materials and removing them from the gut.

Dosage: Administer on a basis of $1\frac{1}{2}$ gr. Sulfamethazine and 6 mg. Neomycin per pound of body weight as initial dose. Follow by daily doses of 1 gr. Sulfamethazine and 4 mg. Neomycin per pound of body weight.

Prices: Package of 4 boluses, **\$2.00**; 12 packages of 4 boluses, **\$22.50**; Jar of 24 boluses, **\$10.50**; 6 jars of 24 boluses, **\$54.00**; Postage extra.

FRANKLIN CALF POWDER

An antacid and soothing agent for use in treatment of simple digestive scours and to supplement specific treatment of infectious scours in young calves. Calf Powder should be given at each feeding, giving a heaping tablespoonful with the feed. Although not intended as a specific treatment for infectious scours, it may be used to supplement specific treatment with sulfonamides or other drugs regarded as specifics. Symptomatic treatment should be employed to supplement medication, and sanitary precautions should be observed.



Prices: 8-ounce package, **\$2.10**; 1-pound package, **\$3.75**. Postage extra.

CALF BACTERIAL SCOUR TREATMENT

For use in the treatment and prevention of bacterial scours in young calves, foals, lambs, and pigs. Franklin Calf Bacterial Scour Treatment is especially suitable for medicating the milk in treating bacterial scours in bucket calves.



Each fluid ounce contains: **Neomycin** (as sulfate), 125 milligrams; **Sulfaguanidine**, 15 grains; **Sulfathiazole**, 10 grains; **Sulfamerazine**, 5 grains; with **Kaolin**, **Pectin**, and **Bismuth subcarbonate**.

The formula provides the ingredients needed to inhibit bacteria, in the gut and through the system; to absorb and carry off toxins; and to soothe the irritated membranes of the intestines and bowels (see page 33).

Neomycin and Sulfaguanidine are slowly absorbed from the intestinal tract, exerting their action for a long period of time. Sulfathiazole and Sulfamerazine are absorbed systemically, providing antibacterial action against many bacteria in the gut and in the system.

The combination of Bismuth, Pectin, and Kaolin acts to absorb toxins and products of bacterial growth; to provide soothing action to irritated membranes of the bowel; and to help consolidate fluid stools and eliminate products of putrefaction.

Prevention: For calves or foals, 1 fluid ounce daily for each 25 pounds body weight; for lambs or pigs, $\frac{1}{2}$ teaspoonful for each 5 pounds body weight, twice daily. Continue preventive dosage for two or three days.

Treatment: Double the preventive dosage for calves or foals; for lambs or pigs, same daily dosage as for prevention.

Price: 16 oz. bottle **\$3.90**. Postage extra.

INFECTIOUS SCOUR BOLUSES

For the treatment of infectious scours and enteritis in young livestock. Each 100-grain bolus contains 16 $\frac{2}{3}$ grains each of **sulfathiazole**, **sulfaguanidine**, and **phthalysulfacetamide**, and 50 grains of **albumin tannate**. **Dosage:** Initial dose to consist of one bolus per 50 pounds of body weight, followed at 12-hour intervals with $\frac{1}{2}$ the dose.

Prices: Package of three 100-grain boluses, **\$1.30**; package of 12 boluses, **\$4.00**. Postage extra.

FRANKLIN MIXED BACTERIN**(Bovine) Formula 3**

This formula consists of chemically-killed bacteria produced by the washed culture method.

**(Bovine)
Formula 3**

Escherichia coli.....30%
Salmonella enteritidis
(Gaertner).....30%
Aerobacter aerogenes...20%
Pasteurella multocida,

Types I, II, and III...20%

Uses: As an aid in preventing conditions attributed to the organisms named in the formula.

Dosage: For healthy calves, 2 cc; for small calves, 1 cc. Using aseptic precautions, inject under the skin as soon after birth as possible. A second dose, double or more, in 3 to 5 days should increase the initial effect.

Price: 20-cc bottle (10 normal doses).
\$1.35. Quantity prices on 100 doses or more,

Note: Since **Mixed Bacterin (Bovine) Formula 3** is usually administered to very young animals, see "Caution" on Page 17

MIXED BACTERINS

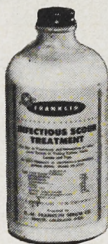
Because these bacterins consist of four or more organisms, they cannot be classified as specific. It is generally recognized, however, that each has a definite value as an aid in preventing or treating infections caused by the organisms named in the individual formulae. Repeated injections are recommended for best results.

It is well-known that certain organisms cause or contribute to complications of diseases which have long been recognized as serious economic threats to the livestock industry. By becoming acquainted with these facts, the knowledge will help to guide stockmen in the selection and use of mixed bacterins.

**INFECTIOUS
SCOUR TREATMENT**

For use in the treatment and prevention of bacterial scours in young calves, foals, lambs, and pigs.

Franklin **Infectious Scour Treatment** is especially suitable for medicating the milk in the treatment of bacterial scours in bucket calves.



Each fluid ounce contains:
Sulfaguanadine, 15 grains; **Sulfathiazole**, 10 grains; **Sulfamerazine**, 5 grains; **Kaolin**, 80 grains; **Pectin**, 5 grains; and **Bismuth Subcarbonate**, 5 grains.

The formula provides the ingredients needed to inhibit bacteria, both in the gut and through the system; to absorb and carry off toxins; and to soothe the irritated membranes of the intestines and bowels (see page 33).

Sulfaguanadine is generally absorbed from the intestinal tract, thus exerting its action for a long period of time. Sulfathiazole and Sulfamerazine are absorbed systemically, providing antibacterial action against many bacteria in the gut and in the system.

The combination of Bismuth, Pectin, and Kaolin acts to absorb toxins and products of bacterial growth and to provide a soothing action to irritated membranes of the bowel. In addition, these ingredients help to consolidate fluid stools and eliminate products of putrefaction.

Treatment Dosage: For calves and foals, give 2 fluid ounces daily for each 25 pounds of body weight. May be given as individual doses or mixed in the milk for bucket feeding. Best results may be expected when the total daily dose is divided into three portions. **Lambs** and **pigs** should be given ½ teaspoonful for each 5 pounds body weight, as above.

Preventive Dosage: For calves and foals, 1 fluid ounce daily for each 25 pounds body weight, in divided portions, as individual doses or in the milk. For **lambs** or **pigs**, ½ teaspoonful for each 5 pounds body weight, twice daily. Continue treatment for two or three days.

Price: 16 oz. bottle, **\$2.65**, postage extra.

Note: See also, **Infectious Calf Scours**, page 33. **Franklin Mixed Bacterin (Bovine) Formula 3**, page 35.

FIRST-AID TREATMENT FOR LIVESTOCK

Prompt treatment of cuts, abrasions, snags, and other wounds of livestock is important if infections and resulting complications are to be avoided or overcome.

Preliminary treatment should include thorough cleansing of the wound or area to be treated. If the wound has become infected, it is best to first remove pus and other foreign matter—thorough flushing with Hydrogen Peroxide will in most cases adequately free the wound of this material. The next step should be to remove any foreign material of solid nature, such as splinters, gravel, etc. The wound should then be thoroughly cleansed with mild soap and warm water to which a reliable antiseptic has been added, followed by application of a suitable medicated dressing. The wound should receive frequent attention until it has healed.

In the following section you will find listed many Franklin preparations which are recommended for various uses in this respect.

VIOLET WOUND DRESSING

Formerly Gall Lotion

A quick-drying, penetrating wound dressing with antiseptic and fungicidal qualities.

These characteristics make Violet Wound Dressing desirable for application to minor wounds or skin abrasions of livestock, such as saddle and harness galls of horses and mules; ringworm of cattle; minor ulcers on livestock; soremouth of sheep; foot-rot of cattle or sheep. Also for painting navels of newborn livestock, and for painting site of hypodermic injection or minor operation. Apply freely according to directions on label.



Price: 4-ounce bottle with dauber applicator, **\$1.35** 16-oz. bottle, **\$2.80**, Postage extra.

WIRE CUT DRESSING

An excellent dressing for treating **cuts and abrasions** on livestock. Promotes gradual healing which in turn helps to reduce scarring of tissues and skin. Also effective as a **fly repellent**.



Franklin Wire Cut Dressing is effective for **treating dry, cracked hooves**, and will aid in preventing drying of hooves following excessive rasping in shoeing. Promotes **healing of wounds** caused by nails, stones, and other sharp objects.

Price: 16-oz. can, **\$2.25**; Postage extra.

FRANKLIN FOOT ROT TREATMENT

For treatment of simple foot rot in sheep, cattle, and hogs.

After thoroughly cleansing affected area, remove scabs, crusts, and rotted tissue. Apply Franklin Foot Rot Treatment full strength with brush or swab, taking care to cover all affected tissue.

Franklin Foot Rot Treatment may also be used for treating simple lip ulcers, harness galls, and minor wounds where the use of a slow-drying form of dressing is desirable.

Prices: 4-ounce, **\$1.35**; 16-oz., **\$3.00**; 128-oz. **\$18.00**. Postage extra.



MINERAL OIL

A practically odorless and tasteless mineral oil of the proper viscosity to produce a mild laxative action. Non-irritating and tends to soothe the gastrointestinal tract. Given in doses of two ounces or more several times daily. Mineral Oil increases the bulk of the feces and stimulates peristalsis. Better results may be obtained by administering with, or followed by, large amounts of water.



Prices: 1-quart, **\$1.35**; 1 gallon, **\$3.95**, 5-gallons **\$17.50**. Drum lots, per gallon, **\$2.60**. Postage extra.

FRANKLIN HOOF Dressing and CONDITIONER

Franklin **Hoof Conditioner** is especially formulated to condition the hoof wall against **cracking** due to **dryness** caused by environment, and excessive rasping at time of shoeing. Also recommended to treat **thrush**.

When **cracks** are present, apply Franklin Hoof Conditioner daily until hoof growth eliminates the cracks.

For **thrush**, cleanse affected area and trim away diseased tissue. Flush with hydrogen peroxide or apply tincture of iodine. Protect by daily application of Hoof Conditioner.

Price: 8-ounce container, **\$2.00**. Postage extra.



FRANKLIN SCARLET OIL

A **non-drying** oily dressing for treatment of **cuts, wounds, abrasions, and burns**. Stimulates growth of epithelial cells to aid in healing; to minimize formation of scar tissue.

Franklin Scarlet Oil is packaged in an aerosol spray container for ease of application. May be applied twice daily as indicated.

Price: 6-ounce aerosol spray container, **\$2.00**, postage extra



TINCTURE OF IODINE

A very strong antiseptic and germicide, Franklin Tincture of Iodine (N. F. 7%) is extremely useful under all conditions where a need for such a preparation is indicated. May be used as a resolvent for many inflammations and swellings. After applying directly to the skin and allowing to dry, it is advisable to swab the treated area with a diluting agent such as rubbing alcohol to avoid blistering. **Prices:** 8 ounce, **\$1.95**; 16 ounces, **\$3.60**; 128 ounces, **\$19.00**. Postage extra.



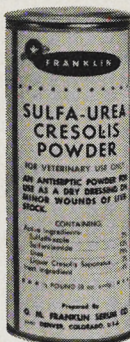
FRANKLIN SULFA-UREA-CRESOLIS POWDER

An antiseptic and germicidal powder containing **100% active ingredients** for use as a dry dressing of minor wounds of livestock to promote sterilization and stimulate healing processes. Ingredients: **Sulfathiazole, 2%; Sulfanilamide, 13%; Cresolis, 2%; Urea, 83%.**

Urea, combined with Sulfathiazole and Sulfanilamide, is credited with increasing the active effect of the sulfonamides by as much as ten volumes. The sulfonamides inhibit the growth of streptococcus, staphylococcus, and other bacteria. Urea aids in ridding wounds of pus, dead cells, and debris.

Sulfa-Urea-Cresolis Powder is valuable in dry-dressing of wounds, for treatment of foul-foot (foot rot), and for preparing an intrauterine douche for cleansing operation, treatment of metritis, vaginitis, etc. It is also reported that excellent results are obtained when used as a post-operative dressing in castration wounds.

Price: 8 ounce, **\$2.20**. Postage extra.



DOUBLE SULFA WOUND OINTMENT

A creamy ointment containing **5% Sulfathiazole** and **5% Sulfanilamide**, for use on surface wounds to aid in healing and prevention of infection from pus-forming bacteria sensitive to these sulfonamides.

For best results, cleanse wound and surrounding area, removing all pus and debris; then apply ointment freely. To protect wound from contamination, apply clean bandage if possible.

Lesions of **cowpox** and **foot-rot** may be kept free of contamination by bacteria sensitive to the sulfonamides in this ointment by cleansing and applying the ointment freely.

Prices: 2-ounce jar, **85c**; 1-pound jar, **\$4.00**; Postage extra.



FRANKLIN RAT-MOUSE BAIT STATION

With Prolin*

Franklin Rat-Mouse Bait contains Warfarin and an anti-bacterial agent which sup-

presses bacterial growth in the intestines, thereby decreasing the formation of vitamin K, the natural antidote for Warfarin.

Warfarin kills rats and mice by preventing the blood from clotting. A single feeding will not be fatal, and it is important they receive a small feeding at all

times, for 7 to 12 days for effective control. Place near burrows and runways. Franklin Rat-Mouse Bait Station is packaged in a self-service container.

Price: 1-pound package, \$1.25.

*Reg. Trademark of the Wisconsin Alumni Research Foundation.

FRANKLIN SUGAR FLY BAIT

Containing Diptrex

To aid in the control of resistant and non-resistant strains of houseflies in dairy barns, poultry houses, stock pens, stables, kennels, garbage areas, and other places where fly population is intense or bothersome. May be used dry as it comes from the container, or may be mixed in water and sprinkled or sprayed on surfaces.

As a dry application, scatter lightly, in areas as directed, so that bait is barely visible.

As a water solution, mix as directed and sprinkle or spray on surfaces to be treated.

Price: 1-pound can, \$1.80. Postage extra

FRANKLIN MOTHER-UP*

For use as an aid in causing foster mothers to accept young orphan calves, lambs, and pigs. **Mother-Up** is packaged in an aerosol container for convenience of application.



Calves and Lambs:

Spray the back, navel area, and inside of the hind legs and groin of the calf or lamb with a small amount of **Mother-Up**; spray the muzzle and udder of the cow or ewe.

Then place the pair in a small, quiet pen until the orphan is observed nursing.

Sows and Pigs: When it becomes necessary to even the litter between sows, confine the sow with her natural pigs and the pigs to be added in a small pen. Spray all of the pigs with **Mother-Up**.

For best results, use **Mother-Up** as soon as possible after birth of the young.

Price: 6-ounce aerosol can, \$4.50; postage extra.

*T. M. of related Company.

WHEAT GERM OIL

Suggested as a feed supplement to the rations of livestock, pets, and poultry. Wheat germ oil has been successfully used for this purpose for more than 25 years.

Can be safely stored at room temperature.

Prices: 4-ounce, \$1.50; 16 oz., \$3.15; 32 oz., \$7.80; 128 oz., \$27.20. Postage extra.



Control Overeating Disease: Ovine Enterotoxemia (overeating disease) is a widespread disease causing heavy losses among feed-lot and pastured lambs. For valuable information concerning control measures, refer to page 10.

FRANKLIN PENICILLIN—DIHYDROSTREPTOMYCIN SOLUTION

(Procaine Penicillin G in Crystalline Dihydrostreptomycin Sulfate Solution)

PROVIDES THE STOCKMAN WITH A CONVENIENT-TO-USE, ECONOMICAL AND EFFECTIVE ANTIBIOTIC COMBINATION TO COMBAT MANY BACTERIAL DISEASES OF LIVESTOCK

The use of penicillin and dihydrostreptomycin in combination provides the stockman with one of his most useful weapons in fighting bacterial diseases.

Penicillin is an extremely useful antibiotic, being effective in treating many diseases, primarily those caused by a group of bacteria known as gram-positive. A smaller group of bacteria, known as gram-negative are resistant to penicillin. These bacteria include *E. coli* and others involved in diarrhea of livestock; *Pasteurella multocida*, involved in pneumonia; *Necrophorus spherophorus*, considered as the primary infective agent of foot rot in cattle and calf diphtheria. **Dihydrostreptomycin** is effective in treating diseases involving these gram-negative organisms.

Many bacterial diseases of livestock are complex, involving several organisms in either a primary or secondary role. Since some of these bacteria may be sensitive to penicillin and some to dihydrostreptomycin, and in many instances it is impossible to determine which bacteria may be involved, the combination use of penicillin and dihydrostreptomycin may be expected to give better results than may be obtained from the single use of either. Thus, by combining penicillin and dihydrostreptomycin in a single dose, an effective broad spectrum antibiotic combination is obtained, offering convenience in use, economy, and quick action.

Franklin Penicillin G in Dihydrostreptomycin Solution is useful in combating many bacterial diseases of livestock, including: Actinomycosis (lumpy jaw); actinobacillosis (woody tongue); swine erysipelas; anthrax (in early stages); blackleg; calf pneumonia; calf diphtheria; foot rot; eye infections; simple abscesses; wound infections; metritis; malignant edema; mastitis (to support udder infusions); red-water disease; tetanus (in early stages to supplement antitoxin); shipping fever; navel infections; enteritis and diarrhea of calves, pigs, foals, and lambs to supplement oral treatment with sulfonamides or

antibiotics; respiratory diseases of horses, cattle, sheep, and swine to supplement specific treatment; bluebag in sheep to supplement under infusions; secondary bacterial infections in virus diseases. Treatment of these infections with Penicillin G in Dihydrostreptomycin Solution should be supplemented with symptomatic or local treatment as might be indicated.

Franklin Penicillin G in Dihydrostreptomycin Solution is administered by means of deep intramuscular injection. It should be administered as soon as possible after symptoms appear, for best results. Many stockmen keep a few bottles on hand to provide prompt treatment of emergency cases.

Each cc. Franklin Penicillin G in Dihydrostreptomycin Solution contains 200,000 units procaine penicillin G and 0.25 grams dihydrostreptomycin sulfate. The usual daily dosage of penicillin is considered to be from 200,000 to 500,000 units per 100 pounds of body weight; the considered daily dosage of dihydrostreptomycin sulfate is from 0.25 grams to 0.625 grams per 100 pounds. In severe, acute cases the dosage may be increased, with comparative safety, to 1 million units penicillin and 1.25 grams dihydrostreptomycin per 100 pounds. Daily intramuscular injections should be administered until symptoms disappear.

Prophylactic Uses: Franklin Penicillin G in Dihydrostreptomycin Solution may be used effectively in some instances of disease

outbreaks, as a preventive measure. It has reportedly been used, with apparent success, in calves following weaning, shipping, or other exposure to lessen danger from shipping fever.

Franklin Procaine Penicillin G in Dihydrostreptomycin Solution is available in 10-cc, 100-cc and 200-cc vials.

Prices are subject to frequent change. Contact your Franklin dealer or write us for current prices.

Milk from treated dairy animals must not be used for human consumption within 48 hours after last treatment.



FRANKLIN PENICILLIN

For Treating Certain Bacterial Diseases of Livestock

Penicillin is one of the most useful chemotherapeutic drugs for treating many livestock infections. It exerts a powerful bacteriostatic action against a wide range of bacteria involved in diseases either as the primary agent or as a secondary invader.

Among the diseases in which penicillin-sensitive bacteria are considered as a primary agent, and in which the use of penicillin is considered beneficial, are: Actinomycosis (lumpy jaw); anthrax; blackleg; swine erysipelas; malignant edema; acute mastitis (streptococcal and staphylococcal, to supplement udder infusions); tetanus (in early stages to supplement antitoxin); strangles and distemper in horses.

Penicillin is also useful in treating other bacterial infections, in which penicillin-sensitive organisms are considered to play a secondary role. These include: Calf pneumonia; calf diphtheria; footrot; simple abscesses; wound infections; metritis; shipping fever and pneumonia; navel infections; bluebag in sheep (to supplement udder infusions).

Penicillin in oil is frequently used as an aid in halting the spread of disease due to penicillin-sensitive bacteria. These include herd outbreaks of shipping fever, blackleg, anthrax, and erysipelas.

The usual daily dosage of penicillin is 200,000 to 500,000 units per 100 pounds of body weight, administered intramuscularly. In highly acute cases, 1 million units per 100 pounds may be administered with safety.

Crystalline Procaine PENICILLIN G IN OIL, Veterinary, is available in 10-cc vials, each cc. containing 300,000 units. Recommended for use to establish and maintain high blood levels for at least 24 hours, in cases which do not require establishment of immediate high blood levels as in chronic infections, or as a preventive measure.

Crystalline Procaine PENICILLIN G IN AQUEOUS SUSPENSION, Veterinary, is available in 10-cc and 100-cc vials, each cc. containing 300,000 units. Recommended for use to establish immediate high blood levels required in treating acute infections.

Prices: Subject to frequent change. Contact your Franklin dealer or write us for current prices.

Milk from treated dairy animals must not be used for human consumption within 48 hours after last treatment.

ORGANIC IODIDE COMPOUND

For use as dietary source of iodine to prevent and treat **iodine deficiency; foot rot** in cattle when caused by *Spherophorus necrophorus*; **wooden tongue** and **lumpy jaw** in cattle when caused by *Actinomyces lignieresii*; and as an **expectorant** in mild respiratory infections of livestock.



To aid in **preventing** foot rot, wooden tongue, and lumpy jaw, mix 1 pound Organic Iodide Compound with 30 pounds stock salt and

offer free choice on continuous basis; or mix 1 ounce to the daily ration for each 25 head and feed continuously. As a **treatment** 10 ounces to the daily ration for 25 head and feed for 2 or 3 weeks. For individual treatment, give 2 teaspoonfuls in the daily feed for 2 to 3 weeks.

As an **expectorant** in cattle and horses, mix 1 ounce per animal in the daily feed or water. Do not administer for more than 7 days. For sheep and swine, $\frac{1}{4}$ to $\frac{1}{2}$ ounce per animal in daily feed or water, not to exceed 7 days.

Refer to product label for additional information.

Prices: 1-pound, \$1.60; 10-pounds, \$13.50; Postage extra. 100-pound drum, \$99.00.

MEDICATED TEAT DILATORS



For injured teats, sore teats, scab teats, obstructions.

Medicated surgical dressings for the teat canal. Contains sulfathiazole.

The medication is IN the dilators and is released slowly to maintain prolonged antiseptic action.

1. Carry Antiseptics into teat canal to combat infection and reduce inflammation.

2. Furnish soft, absorbent protection to the delicate lining of teat canal.

3. Keep teat canal OPEN in its natural shape while tissues heal.

Large package, (40 dilators), \$1.50; Trial package, (15 dilators), 75c.

REFERENCE GUIDE

To Diseases, Wounds, and Abnormal Conditions in Livestock
Symptoms; Causes; Medicinal Aids; Preventive Measures; Suggestions for
Control and Treatment

GENERAL INFORMATION

This chart is necessarily incomplete as space does not permit detailed information. The information contained herein should not be considered as specific, but as an aid in identifying the condition, with suggested means of control.

References to suggested products for use in controlling the condition should not be regarded as specific. The product may be helpful, either to combat primary or secondary infection.

For more complete information on either disease condition or use of a product, please refer elsewhere in this catalog, consult product label copy or other reliable source.

It should be emphasized that all biologicals, medicinals and insecticides should be regarded as an aid to the control of the condition and as a supplement to good animal husbandry and management practices. Used accordingly, they will be instrumental in saving many dollars in livestock losses. Sole dependence on the use of any product, or its careless use, to the disregard of sound animal husbandry practices may result in a failure to receive the full value of the product, and in some instances, may be to invite disaster.

Products shown in bold-face type are to be found in this catalog under the Franklin or other label.

ABORTION: All Species

Cause: Bacterial or virus infection; nutritional deficiencies; injuries; plant, chemical or mold poisoning; internal or external parasites.

Symptoms: Premature expulsion of fetus.

Medicinal Aids: Intrauterine treatment following abortion (**Uterine Capsules**, **Sulfa-Urea Uterine Boluses**) antibiotics or sulfas to avoid infection.

Prevention: Consult veterinarian to determine cause and advise appropriate preventive measures. *Brucella Abortus Vaccine*. *Leptospira Pomona Bacterin*.

ACETONEMIA: (Ketosis) cattle

Cause: Faulty carbohydrate metabolism; feeding disorders or practices.

Symptoms: Decreased milk production;

loss of appetite; loss of weight; constipation; staggering gait; blindness; extreme nervousness; paralysis; convulsions; sweetish smell to body, milk and urine. Incidence about ten days to six weeks following calving.

Medicinal Aids: **Dextrose Solution 50%**; **C-D-M Solution**; corticosteroids; sodium propionate; feeds containing sugar, molasses.

Prevention: Uncertain. Maintenance of good condition prior to and following calving.

ACTINOBACILLOSIS: (Woody tongue) cattle

Cause: Local infection by *Actinomyces ligniersi*.

Symptoms: Hard swelling of tongue or throat area; protrusion of tongue; slobbering; inability to eat or swallow; loss of weight and condition. May also infect lymph glands.

Medicinal Aids: **Sodium Iodide 6%**; **Organic Iodide Compound**; **Penicillin-Dihydro-streptomycin Solution**.

Prevention: Avoidance of feeds causing injury to mouth and tongue. Isolate infected animals to avoid spread of infection.

ACTINOMYCOSIS: (Lumpy jaw) cattle (sometimes other species)

Cause: Local infection by *Actinomyces bovis*.

Symptoms: Hard, tumor-like formations on jawbones; drainage of pus from swellings; slobbering; loosened teeth; loss of weight.

Medicinal Aids: **Sodium Iodide 6%**; **Organic Iodide Compound**; **Penicillin-Dihydrostreptomycin Solution**.

Prevention: Same as for actinobacillosis.

ANAPLASMOSIS: cattle

Cause: *Anaplasma marginale*. Spread by blood-sucking insects, unclean surgical and vaccination procedures.

Symptoms: Elevated temperature (103°-107°); yellowish membranes; depression; rough hair coats, anemia in advanced cases; jaundice.

Medicinal Aids: Broad spectrum antibiotics; **Sodium Cacodylate**; arsenicals.

Prevention: Control of external parasites; strict asepsis in performing surgical operations and vaccinations.

Remarks: No specific prevention or treatment known.

ANEMIA: (Baby pig anemia-thumps) Pigs

Cause: Iron deficiency.

Symptoms: Fatigue, "thumps," weakness, emaciation, unthriftiness.

Medicinal Aids: **Iron Dextrin—100.**

Prevention: **Iron Dextrin—100** administered at 2-4 days of age, preferably on third day.

ANTHRAX: (cattle, sheep, horses, swine, man)

Cause: *Bacillus anthracis.*

Symptoms: Sudden deaths in herd; excitement followed by depression, stupor, spasms, staggering; rapid respiration; high temperature (107°); bloody discharges from body openings; swellings on various parts of body.

Medicinal Aids: Treatment generally unsatisfactory due to rapid course; massive doses of **Penicillin**; anti-anthrax serum.

Prevention: Routine vaccination with **Anthrax Vaccine** (Sterne Strain).

Remarks: If anthrax is suspected, call a veterinarian at once. Administer large doses of **Penicillin** to unaffected animals in herd in event of outbreak.

BACILLARY HEMOGLOBINURIA:

(Red water Disease) cattle

Cause: *Clostridium hemolyticum.*

Symptoms: High fever; depression; sudden deaths; profuse passage of port wine colored urine; bloody diarrhea; death follows appearance of symptoms in 24-36 hours.

Medicinal Aids: Massive doses of **Penicillin** when symptoms are first noted.

Prevention: Routine vaccination with **Clostridium Hemolyticum Bacterin.**

Remarks: In the event of outbreak, inject all animals in herd with large doses of **Penicillin in Oil.**

BLACKLEG: (cattle, sheep)

Cause: *Clostridium chauvei.*

Symptoms: Sudden deaths in young cattle; lameness; gaseous swellings beneath skin of shoulder, hip, breast, back of flank; complete lack of appetite; course of disease so rapid symptoms may not be noticed.

Medicinal Aids: Massive doses of **Penicillin** in early stages.

Prevention: Routine vaccination of all young cattle with **CCS-2, CCS-5** or **Triple Bacterin.**

Remarks: In event of outbreak, vaccinate all calves with one of above bacterins and inject with large doses **Penicillin in Oil.**

BLACK DISEASE (False Blackleg): (Cattle)

Cause: *Clostridium novyi.*

Symptoms: See symptoms for blackleg and malignant edema.

Medicinal Aids: Of little value.

Prevention: Vaccination with **Clostridium Chauvei-Septicum-Novyi Bacterin; Clostridium Novyi Bacterin.**

BLACK DISEASE: (sheep)

Cause: *Clostridium novyi*, generally in flocks infested with liver flukes.

Symptoms: Sudden deaths of adult sheep; bloody foam around mouth; lack of appetite.

Medicinal Aids: Of little value.

Prevention: Control of liver flukes with Hex-A-Fluke, carbon tetrachloride; drainage of swamps or treatment with copper sulfate to control snails. Vaccination with **Clostridium Novyi Bacterin** in connection with snail and fluke control.

BLOAT—RUMINANTS:

May be of three types: gaseous, frothy, or obstructive. May be caused by overfeeding, founder, types of feed, toxic substances in feed, fermentation, slime produced by rumen bacteria, lack of roughage, or a symptom of disease.

Control: Cause should be determined and corrected.

Treatment: For immediate relief, use **Stomach Tube** or **Trocar.**

BLOAT—FROTHY: (cattle)

Cause: Uncertain. Thought to be due to consumption of froth-producing forage such as clovers, legumes.

Symptoms: Rapid bloating.

Medicinal Aids: **Frothy Bloat Treatment; Mineral Oil; Stomach Tube; Trocar.**

Prevention: Management practices.

BLUE BAG: (see mastitis of sheep)

BOTS: (horses)

Cause: Eggs laid by botfly.

Symptoms: Digestive disorders; poor condition.

Prevention: No practical means.

Medicinal Aids: Anthon Horse Wormer.

CALCULI, URINARY: water belly

Cause: Formation of stones in urinary tubes by deposit of minerals.

Medicinal Aids: Depropanex.

Prevention: Uncertain.

CALF DIPHTHERIA: (necrotic laryngitis; necrotic stomatitis)

Cause: Infection by *spherophorus necrophorus*. Same organism involved in foot rot, navel ill.

Symptoms: Depression; drooling of saliva; refusal of feed; coughing; yellowish discharge from nostrils; ulcers in mouth and tongue, with cheesy scabs; foul breath.

Medicinal Aids: **Tri-Sulfa; Sulfapyridine; Penicillin - Dihydrostreptomycin; Tincture of Iodine** for local treatment of lesions.

Prevention: No practical means; Management practices. **Organic iodides** in feed may lessen incidence.

CALF PNEUMONIA:

Cause: Possible virus complicated with bacteria such as pasteurella.

Symptoms: Typical pneumonia symptoms, labored breathing; discharges; high temperatures.

Medicinal Aids: **Tri-Sulfa; Penicillin-Dihydrostreptomycin; Anti-Corynebacterium Pasteurella Serum.**

Prevention: Management; vaccination with pasteurella bacterins against secondary infections.

Remarks: Avoid dehydration by supplying adequate liquids, forcing if necessary.

CALF SCOURS: (white scours; calf scour pneumonia complex)

Cause: Possible virus; various bacteria including *E. Coli*; *pasteurella organisms*; *salmonella enteritidis* (Gaertner).

Symptoms: Dullness, lack of appetite, weakness, high temperature; profuse watery diarrhea; sudden deaths, pneumonia.

Medicinal Aids: **Bacterial Scour Boluses; Infectious Scour Boluses; Calf Bacterial Scour Treatment; Infectious Scour Treatment; Tri-Sulfa; Penicillin - Dihydrostreptomycin; Vitamin A Injectable Solution.** Astringents and soothing agents to relieve irritation.

Prevention: Vaccination with bacterins containing causative organisms as soon after birth as possible.

Remarks: Avoid dehydration by supplying adequate liquids, forcing if necessary. Maintain strength of animal by frequent feedings of nourishing feeds.

CHAPPED TEATS: Routine use of **Chap-Ointment; Udder-Eze.****COCCIDIOSIS:** (bloody scours; bloody diarrhea)

Cause: Ingestion of *coccidia*.

Symptoms: Profuse diarrhea, blood tinged; in severe cases pure blood may be passed.

Medicinal Aids: **Tri-Sulfa; Sulfaguandine; Infectious Scour Boluses.**

Prevention: Management practices.

COW POX:

Cause: Virus.

Symptoms: Small red nodules on udder and teats interchanging to blister-like pustules.

Medicinal Aids: **Double-Sulfa Ointment; Violet Wound Dressing; Stock Dip & Disinfectant; Cresolis.**

Prevention: Management.

DIARRHEA: Scours, all types.

Cause: Viruses; bacteria including coliform organisms; and improper feeding.

Remarks: Scours are of many types, and are often a symptom of other conditions such as vitamin A deficiency, coccidiosis, internal parasites, digestive troubles, viruses, etc. Proper diagnosis is essential for control.

Treatment: In general, classic treatment of scours includes: Removal of stomach contents; inhibition of causative bacteria. soothing of irritated gut; maintenance of strength and avoidance of dehydration by frequent feedings of nourishing liquids and gruels.

DISTEMPER, EQUINE: (strangles)

Cause: *Streptococcus equi*.

Symptoms: High temperature; discharge from nostrils; depression, lack of appetite; swelling of lymph glands.

Medicinal Aids: **Tri-Sulfa; Penicillin-Dihydrostreptomycin Solution;** expectorants (**Organic Iodide Compound**).

Preventive Aid: Vaccination with Mixed Bacterin Equine, Formula 1.

EAR TICKS: Cattle (sometimes other species)

Cause: Spinose ear tick.

Medicinal Aids: Spinose Ear Tick Treatment; Screwworm Ear Tick Bomb.

Prevention: No practical means.

ECTHYMA, CONTAGIOUS: Soremouth of sheep, goats.

Cause: Filterable virus.

Symptoms: Brownish-gray, wart-like, moist scabs on lips, later turning to dry, hard scabs. Lips are generally swollen.

Medicinal Aids: Use of penetrating antiseptic solutions, after scab has been removed, to prevent or treat secondary infections. **Violet Wound Dressing; Foot Rot Treatment; Double Sulfa Ointment;** potassium permanganate; 10% silver nitrate.

Prevention: Routine vaccination with Ovine Ecthyma Vaccine.

Remarks: May be complicated by *S. necrophorus* (causative organisms of foot rot, etc.).

ENCEPHALOMYELITIS, EQUINE:

Cause: Virus.

Symptoms: Incoordination; depression, circling; violent struggling when down.

Medicinal Aids: Treatment of little value.

Prevention: Vaccination with encephalomyelitis vaccine.

ENTERITIS: Swine (necro)

Cause: *Salmonella choleraesuis*; complicating bacteria.

Symptoms: High temperature; diminished appetite; diarrhea.

Medicinal Aids: **Tri-Sulfa;** arsenicals.

Prevention: Sanitation, management; vaccination with **porcine mixed bacterin** may lessen severity. Antibiotics, arsenicals in feed.

ENTEROTOXEMIA, HEMORRHAGIC:

Calves, under two weeks of age, usually.

Cause: *Clostridium Perfringens* Type C.

Symptoms: Signs of colic; uneasiness; straining, and kicking at the abdomen. Bloody diarrhea may develop. Death usually occurs in 2 to 24 hours after first symptoms noted.

Control: Vaccinate cow prior to calving with **Cl. Perfringens Type C. Toxoid.**

ENTEROTOXEMIA: Sheep (over-eating disease; pulpy kidney disease, clabberbelly)

Cause: *Clostridium perfringens* type D.

Symptoms: Sudden deaths; staggering gait; convulsions; dullness; grinding of teeth; coma.

Medicinal Aids: Treatment unsatisfactory.

Prevention: Vaccination with ***Clostridium Perfringens* Type D Bacterin.**

ERYSIPELAS: Swine

Cause: *Erysipelothrix rhusiopathiae*.

Symptoms: Acute form: high temperature; lack of appetite; dullness; reddened areas of skin; intestinal disorders. Chronic form: stiff and enlarged joints; sloughing of skin, unthriftiness.

Medicinal Aids: **Penicillin-Dihydrostreptomycin Solution; Anti-swine Erysipelas Serum.**

Prevention: **Erysipelas bacterin; Anti-swine Erysipelas Serum.**

FACE FLY: Cattle

Control: Due to habits of pest, no one method satisfactory. Same control methods used for hornflies will lower populations when insecticides applied to head.

Products: Beef cattle, **Toxaphene-Lindane** used on back rubbers; **Livestock Insecticide Powder.** Dairy cattle, **Livestock Insecticide Powder** applied frequently to face, head, shoulders and backs may help. Daily use of repellents on face will help.

FLUKE, LIVER: (cattle & sheep)

Treatment: Hex-A-Fluke; carbon tetrachloride.

Prevention: Drainage of pastures; control of snails; routine drenching with Hex-A-Fluke.

FOOT ROT: (cattle & sheep) (foul-foot)

Cause: *Spherophorus necrophorus* in cattle, *Fusiformis nodosus* in sheep

Symptoms: Lameness; infection between claws; swelling of joint; ulcerative lesions; foul odor.

Medicinal Aids: **Tri-Sulfa; Sulfapyridine; Foot Rot Treatment; Violet Wound Dressing;** hydrogen peroxide; **Sulfa-Urea-Cresolis Powder, Organic Iodide Compound.**

Prevention: Management; routine hoof trimming; copper sulfate foot baths.

GRASS TETANY: Cattle

Cause: Uncertain but thought to be due to low blood levels of magnesium, possibly calcium, due to grazing lush pastures.

Symptoms: Nervousness; muscular twitching; excitement; convulsions.

Medicinal Aids: **C-D-M Solution.**

Prevention: No practical means known.

GREEN WHEAT POISONING: Cattle, sheep
Cause: Uncertain, but thought to be due to blood calcium deficiency caused by grazing lush wheat pasture.

Symptoms: Extreme nervousness and excitement; muscular twitching; grinding of teeth; spasms; convulsions; paralysis.

Medicinal Aids: **C-D-M Solution.**

Prevention: Impractical. Supplement wheat pasture with hay or other roughage.

GRUBS: Warbles. Cattle.

Cause: Larvae of heel fly.

Symptoms: Bumps in backs of cattle, later followed by appearance of breather holes in hide prior to emergence of grubs.

Control: Treatment of affected cattle with **rotenone** insecticides after holes appear in backs (**Cube Powder; Louse Grub Killer; Grub Killer, rotenone**, liquid or wettable powder). Treat all cattle with **systemic insecticides** after heel fly activity ceases (**Co-Ral** or newer systemics as they may become available).

HEMORRHAGIC SEPTICEMIA:

See Shipping Fever.

HOG CHOLERA:

Cause: Virus.

Symptoms: Weakness; lack of appetite; high temperatures; eye discharges; vomiting; constipation followed by diarrhea; convulsions.

Medicinal Aids: Treatment unsatisfactory.

Prevention: Vaccination with Hog Cholera Vaccine, Tissue Culture Origin; Hog Cholera Antibody — Concentrate; Hog Cholera Vaccine, Crystal Violet.

HOG MANGE: (hog scab)

Cause: Mange mite (*sarcoptes scabiei* suis)

Medicinal Aids: **Lindane**, 20% liquid concentrate or 25% wettable powder.

HORNFLY: Beef Cattle

Control: Insecticide sprays; back rubbers; dusting powder.

Products: **Toxaphene-Lindane Spray; Bricon Back Rubber Insecticide; Livestock Insecticide Powder.**

HORNFLY: Dairy Cattle

Control: Dusting powder.

Product: **Livestock Insecticide Powder.**

IBR DISEASE: (see rednose)

KEDS: (see sheep tick)

KERATITIS: (see Pinkeye)

LAMBING PARALYSIS: (pregnancy disease) sheep

Cause: Uncertain but thought due to incomplete carbohydrate metabolism resulting from lack of exercise, underfeeding.

Symptoms: Dullness, slow movement, unsteady gait, partial paralysis. Appears 2-4 weeks before lambing. Death follows initial symptoms 5 or 6 days.

Medicinal Aids: **Dextrose Solution;** molasses in diet.

Prevention: Management; feeding molasses prior to time trouble generally appears; exercise ewes daily.

LEPTOSPIROSIS: (cattle; swine; horses; sheep)

Cause: *Leptospira pomona*

Symptoms: High fever; depression; diarrhea; bloody urine; anemia; abortion; sudden cessation of milk flow.

Medicinal Aids: Treatment not entirely satisfactory. In severe cases broad spectrum antibiotics in massive doses; **Penicillin-Dihydrostreptomycin Solution.**

Prevention: **Leptospira Pomona Bacterin;** Management practices.

LICE: (cattle, sheep, goats, hogs)

Control: Insecticides as dip; spray or dust.

Products: **Toxaphene-Lindane Spray; Lindane**, 20% liquid concentrate or 25% wettable powder; **rotenone**, liquid or wettable powder.

LICE: Dairy Cattle

Control: Dusting powder; spray.

Products: **Louse-Grub Killer** (dust); **rotenone** spray prepared from liquid or wettable powder.

LIVER FLUKES: (see flukes)

LUMPY JAW: (see actinomycosis)

MALIGNANT EDEMA: (all species)

Cause: *Clostridium septicum*; wound infection.

Symptoms: High temperatures; depression; lack of appetite; swellings over different parts of body; sudden deaths.

Medicinal Aids: Generally unsatisfactory; massive doses of **Penicillin** (aqueous) in

early diagnosis; broad-spectrum antibiotics.

Prevention: Routine vaccination: **CCS-2; CCS-5; Triple Bacterin**. In event of outbreak vaccination of all animals may be supplemented by intramuscular injections of **Penicillin** (aqueous).

MANGE: Psoroptic or sarcoptic. Sheep, cattle (Scabies, scab).

Cause: Psoroptic or sarcoptic mites.

Symptoms: Skin lesions and crusts. Itching and uneasiness. Loss of hair or wool. Scabs.

Control: Use of **Lindane WP-25** in 0.06% mixture. Hold animal in dip for several minutes.

MASTITIS: (cows)

Causes: Infection of mammary gland with bacteria including: *streptococci*; *staphylococci*; *coliform organisms*; *corynebacterium pyogenes*; *pasteurella multocida*; *salmonella enteritidis*; *pseudomonas*; yeasts; molds; injuries to teats and udders contributing factor.

Symptoms: Stringy milk; caked udder; feverish udder; blood-streaked milk; elevated temperature.

Medicinal Aids: **Penstrepclin plus; Penstrepcin; Tri-Sulfa; Penicillin-Dihydrostreptomycin Solution; Udder-Eze; Chap Ointment; Wax Teat Dilators; Mastitis Test Blotters.**

Prevention: Sanitation and management; vaccination, using mixed bacterins containing the more prevalent organisms.

MASTITIS: (sheep) (Blue bag)

Cause: *Pasteurella mastitidis*

Symptoms: Fever, loss of appetite, rejection. Ewe lags behind band, showing lameness, Udder swells, becoming hard. In advanced cases, udder cakes, appears blue. Temperature rises 105°-109° F.

Medicinal Aids: **Tri-Sulfa; Penicillin-Dihydrostreptomycin Solutions;** use medication at first symptoms.

Prevention: Management.

MILK FEVER: (parturient paralysis)

Cause: Imbalance of blood calcium, blood sugars and sometimes magnesium.

Symptoms: Paralysis occurring shortly after calving; depression; collapse; unconsciousness; head turned back, with neck bowed; spasms of neck muscles.

Medicinal Aids: **C-D-M Solution**, intravenously or intraperitoneally.

Prevention: No practical preventive measures known.

NAVEL ILL: (all new born farm animals)

Cause: Infection of navel by various bacteria.

Medicinal Aids: Treatment generally unsatisfactory.

Prevention: Sanitation following birth; painting navel with **Tincture of Iodine; Violet Wound Dressing.**

NECROBACILLOSIS: (all species)

Cause: Infection from *necrophorus actinomyces* (*spherophorus necrophorus*).

Symptoms: Varied secondary infection of wounds. Foot Rot; bullnose of swine; venereal disease of bucks; in sore-mouth lesions of sheep; calf diphtheria; liver abscesses.

Medicinal Aids: **Sulfapyridine; Tri-Sulfa; Penicillin - Dihydrostreptomycin Solution; Foot Rot Treatment; Organic Iodide Compound; Violet Wound Dressing.**

NECROTIC ENTERITIS: (necro) see enteritis

OVEREATING DISEASE: See enterotoxemia

PINKEYE: (cattle, sheep) (keratitis)

Cause: Bacterial (and possibly virus) infection of eyes often as secondary infection to eye irritations and injuries such as sun glare, snow glare, weed pollen, sand, dirt or sharp-awned grasses.

Symptoms: Swelling and redness of eyelids; free-flowing tears; avoidance of strong light; cloudiness and opacity of cornea; corneal ulcers.

Medicinal Aids: **Pinkeye Powder; Pink-eye Spray; Penicillin-Dihydrostreptomycin.**

Prevention: Avoidance of predisposing causes, vaccination with mixed bacterin containing more prevalent bacterial invaders to lessen severity or shorten course of disease. (**Bovine Mixed Bacterin Formula 1** contains many of these bacteria.)

PNEUMONIA: (see shipping fever)

PROLAPSE OF WOMB:

Replacement of organ using aseptic precautions. Hold in place by suturing lips of vulva or use of **Storz' Womb Support; Cresolis; Sulfa-Urea Uterine Boluses; Uterine Capsules.**

PULPY KIDNEY DISEASE: (see enterotoxemia)

RABIES: All species.

Cause: Virus.

Symptoms: Affected animals highly excited and irritable at first, later becoming depressed and paralyzed in 3 to 5 days.

Remarks: If rabies suspected, consult veterinarian for accurate diagnosis, and contact local health authorities. Disease is transmissible to man.

RED WATER DISEASE: (see bacillary hemoglobinuria)

RED NOSE: Infectious Bovine Rhinotracheitis

Cause: Virus infection complicated by bacterial invaders.

Symptoms: Excessive nasal discharge; high temperatures; coughing; increased respiration; muzzle may be reddened or incrustated.

Medicinal Aids: **Tri-Sulfa; PEN-Dihydro-STREP L.A.; Penicillin-Dihydrostreptomycin;** for treatment of secondary infections.

Prevention: Infectious Bovine Rhinotracheitis Vaccine.

RINGWORM: (cattle, horses)

Cause: Fungus infection of skin.

Symptoms: Round, scaly, incrustated hairless patches on skin.

Medicinal Aids: **Tincture of Iodine 7%; Violet Wound Dressing.**

Prevention: Management.

RUMEN DYSFUNCTION:

Cause: Feeding conditions; injuries; depletion of normal rumen bacteria due to disease; treatment with antibiotics or sulfonamides.

Symptoms: Poor condition; depression; sometimes poor appetite.

Medicinal Aids: Rumen Activator.

SCABIES: See mange.

SCOURS: See diarrhea.

SCREWWORMS: Cattle, sheep

Medicinal Aids: Kiltect—100; Screw-worm-Ear Tick Bomb; EQ-335; Smear 62; Insecticidal Wound Dressing & Protectant; **Co-Ral.**

Prevention: Above treatments; Protec; **Blood Stopper.**

SHIPPING FEVER: (all livestock) (Hemorrhagic Septicemia)

Cause: Possible virus or viruses complicated by *Pasteurella multocida.*

Symptoms: High temperature; loss of appetite; difficult and rapid breathing; cough; mucous nasal discharge; muscular trembling.

Medicinal Aids: **Tri-Sulfa; PEN-Dihydro-STREP L.A.; Penicillin-Dihydrostreptomycin;** expectorants.

Prevention: Management; vaccination against pasteurella infection. **C-P Bacterin; Hemorrhagic Septicemia Bacterin; Triple Bacterin; Mixed Bacterin Bovine Formula 1.**

SHOCK, ANAPHYLACTIC: (serum sickness)

Cause: Sensitivity to injections of foreign materials; serums, vaccines, bacterins, possibly other medicines or proteins.

Symptoms: Labored breathing; drop in temperature, muscular weakness; convulsions.

Medicinal Aids: **Epinephrine** hydrochloride solution, 1—1,000, administered subcutaneously or intramuscularly. 4cc dose to small animals—8cc to large animals—1cc to baby pigs.

SOREMOUTH: See Ethyma

STOMACH WORMS: Cattle, sheep, goats, horses

Symptoms: Poor condition; emaciation; anemia.

Medicinal Aids: **Phenothiazine.**

TETANUS: (all species)

Cause: Infection of wounded or injured tissues by *Clostridium tetani.*

Symptoms: Localized stiffness progressing to prolonged contraction of muscles; excitability; walking, turning or backing are difficult; spasms of neck and back muscles cause extension of head and neck. Temperature may reach as high as 108° or 110°F (horse) towards end of fatal attack.

Medicinal Aids: Tetanus Antitoxin with large doses of aqueous penicillin.

Prevention: Tetanus Toxoid.

TICKS, Cattle: Several varieties of "hard-shell" ticks of economic importance.

Symptoms: Easily seen on animals. Biting wounds, offering probability of secondary infection; screwworm strikes.

Control: Periodic dipping (preferred over spraying) in various insecticides, including: **Toxaphene-Lindane Spray Concentrate; Lindane 20% (liquid) or 25%**

(wetttable powder); and several other insecticides.

TICKS, Sheep (keds)

Cause: A wingless fly, commonly called a tick.

Control: Use of various insecticides as dip, spray, or dust, including: **Toxaphene-Lindane Spray Concentrate; Lindane; Rotenone.**

VITAMIN A DEFICIENCY: All species.

Cause: Inadequate supplies of vitamin A in ration.

Symptoms: In young animals, diarrhea; lacrimation; staggering gait; weakness; respiratory infections. In older animals, night blindness; abortion, or weakness in newborn; thin or watery diarrhea; reduced gains; shy breeding.

Control: Supply adequate amounts of vitamin A supplements to ration. In acute cases, use injectable **Vitamin A-D-E Emulsifiable (injectable solution); vitamin A (Injectable Solution).**

WARTS: Cattle

Cause: Virus.

Medicinal Aids: **Wart Vaccine.**

WHITE SCOURS: See calf scours

WOODY TONGUE: See actinobacillosis

WOOL MAGGOTS:

Medicinal Aids: EQ-335; **Lindane 20%** (liquid) or 25% (wetttable powder); **Livestock Insecticide Powder; Toxaphene-Lindane Spray.**

WORMS: (Internal Parasites): Horses, cattle, swine, sheep and goats, dogs, cats.

Types: **Roundworms** in horses, swine, sheep and goats, dogs, cats. **Hookworms** in cattle, sheep and goats, dogs. **Blood worms** (strongyles) in horses. **Tapeworms** in cattle, sheep and goats, dogs. **Nodular worms** in cattle, swine, sheep and goats. **Pinworms** in horses. **Large Mouth bowel worms** in sheep and goats.

Symptoms: Poor condition; emaciation; anemia.

Medicinal Aids: Franklin Tri-Wormer Capsules; Puppy-Kitten Worm Tablets; Franklin Horse Wormer; **Phenothiazine**; Phenothiazine - Lead Arsenate; **Piperazine Drinking Water Wormer.** Check product labels for specific use according to species of animal to be treated.

Prevention: Routine use of medicinal aids, together with management practices.

WOUNDS—New:

Medicinal Aids: To protect against contamination and infection: **Blood Stopper; Dehorning Paint; Protec; Smear 62; Sulfa-Urea-Cresolis Powder; Double-Sulfa Ointment; Violet Wound Dressing; PEN-DihydroSTREP L.A.; Penicillin-Dihydrostreptomycin Solution;** sutures and suture needles; **Scarlet Oil; Tincture of Iodine; Cresolis; Stock Dip and Disinfectant.**

WOUNDS—Old:

Medicinal Aids: Hydrogen peroxide; 70% rubbing alcohol; **PEN-DihydroSTREP L.A.; Penicillin-Dihydrostreptomycin Solution;** above items to protect against contamination and infection.

BODY TEMPERATURE

Variation in normal temperature is a valuable guide in estimating or determining disease conditions in livestock. You will note frequent references to temperatures in the text of the foregoing Reference Guide as a primary symptom of disease.

In general, an increase in temperature is of utmost importance as an indication of general systemic reaction to some infectious condition, while sub-normal temperature is often indicative of anemia, mineral imbalance, or poisoning. For example, a cow may go down after calving and become semicomatose. If the temperature is high, it might indicate septicemic infection; if the temperature is low, it might indicate a possibility of mineral imbalance, such as milk fever.

In reciting symptoms to your veterinarian, the temperature of the patient may be the most important piece of information.

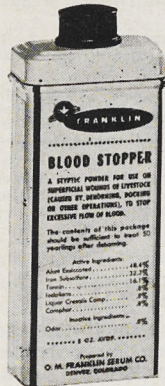
**TABLE OF BODY TEMPERATURES
OF FARM ANIMALS**

Average Normal Rectal Temperature	Range + or —
	1° F.
Horse	100.5
Cow	101.5
Sheep	103
Goat	104
Pig	102
Dog	102
Cat	101.5

See Fever Thermometer on Page 57.

FRANKLIN BLOOD STOPPER

For applying after dehorning and tail docking, and on shear cuts, wire cuts, and similar wounds of live-stock. Particularly effective for use after dehorning young cattle.



Franklin Blood Stopper is a combination of chemicals in powder form that produces a rapid shrinking of the blood vessels and tissues. The effect is to dry up and stop the blood flow. This also hastens healing of the wound. Franklin Blood Stopper makes exposed blood unattractive to flies, thus reducing the danger of infestation. Its use also tends to prevent and destroy

so-called proud flesh in wounds.

In average use for dehorning, 1 pound is sufficient to treat up to 150 calves.

In shaker top cans: 4 ounces, **\$1.65**; 8 ounces, **\$2.75**; 16 ounces, **\$4.20**; 10-pound can, **\$28.80**. Postage extra.

BOT CAPSULES

ADMINISTRATION OF CARBON DISULPHIDE TO HORSES FOR THE DESTRUCTION OF BOTS

Investigations conducted a number of years ago in Italy showed that bots within horses could be destroyed by administering carbon disulphide in capsules to the infested animals. This treatment has been tested by the Bureau of Animal Industry and by veterinarians in many parts of the world and found to be very efficacious. The destruction of the bots is brought about by the action of the carbon disulphide in solution and as a gas, which poisons the bots, causing them to release their hold on the walls of the stomach and intestines.

Capsules are in two sizes (Small for colts and small horses. Large for horses over 1,000 lbs.)

SUREX BOT AND ROUND WORM REMOVER FOR HORSES:

12—Small Capsules (2½ dram).....	\$3.00
12—Large Capsules (6 dram).....	\$5.40
6—Large Capsules (6 dram).....	\$2.75
Gun for Administering.....	1.00

NOTICE

Prices: All vaccines, mastitis ointments, injectable antibiotics and Vitamin A Injectable listed are pre-paid, unless otherwise specified. All other merchandise is priced F.O.B. Calgary, unless otherwise specified.

DEHORNING PAINT AND PROTECTIVE DRESSING

The popular and old reliable dehorning paint used by thousands of cattlemen for many years — now further improved and more effective. Contains bone oil. Does not easily harden or cake.



A protective dressing with styptic, adhesive and fly-repellent qualities, for use following dehorning operations. Also recommended for surface wounds

on domestic animals, such as shear cuts, docking wounds, wire cuts, etc. Many users find that by heating Franklin Dehorning Paint, and keeping it hot while using, the product has a searing effect on the wound and the adhesive qualities are improved. Full directions on each can.

One gallon is sufficient for treating from 200 to 300 head of cattle.

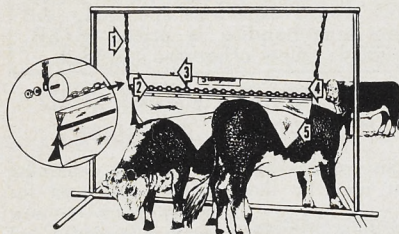
Prices: 16-oz., **\$1.85**; 32-oz. **\$2.60**; 128-oz., **\$7.00**. Postage extra.

Excessive loss of blood following dehorning (and other operations performed on livestock) can have a serious effect on recovery of the animal. During removal of horns, large blood vessels are often severed, resulting in abnormal loss of blood. The use of artery forceps to grasp and pull the vessel, and hot irons to sear the site of bleeding are commonly employed. The use of an astringent powder, such as **Franklin Blood Stopper**, helps to bring bleeding under control and further serves to make the site unattractive to flies and to hasten healing. Application of a dressing such as **Franklin Dehorning Paint** or **Protec** will provide additional protection.

Time spent to bring bleeding under control before the animal is released will pay dividends.

INSECTICIDE APPLICATORS

Sandhills Apron Oiler Model DA-62



1. Oiler swings free on chain from overhead support. "No resistance" principle. Swivel on lower end of support chain permits container to swing or tilt.

2. Steel grid on underside of cylinder works oil into hair and hide . . . conditions, curries, scrapes out grubs.

3. One-point adjustment gives positive, fool-proof oil control. Insecticide flows when cattle turn cylinder.

4. Cylinder is heavy-duty 14-gauge steel, full five feet long, provides coverage for two or three animals at one time, holds 7 to 8 gallons insecticides, enough to treat 60 head of cattle for five weeks.

5. Heavy canvas apron spreads oil over head, shoulders, side and rump. Applies an even film of pest-destroying insecticide from head to tail — covers area where 90% of pests are found.

Price: Without stand, \$80.00 F.O.B. Calgary.

Sandhills Rope-Wick Oiler Model SR-1

1. Four gallon supply tank lasts for weeks . . . just fill it and forget it.

2. As cattle rub against rope, oil is released by pump and flows slowly down, saturating rope.

3. Tough, rot-resistant rope wears like iron. Optional steel guard (inset) gives extra life, increases effectiveness of oiler.



Sandhills Rope-Wick Oilers rub insecticide on instead of scratching it into hair and hide. Ideal for use on dairy cows, hogs and other thin-skinned or short-haired animals where a sharp rubbing element is not desirable. Available with steel guard. (\$5.00 extra)

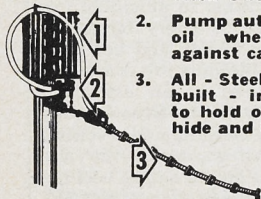
Price: \$40.00. F.O.B. Calgary.

Sandhills All-Steel Cable Oiler Model WO-58

1. Four gallon oil supply tank, similar to one used on Rope-Wick Oiler.

2. Pump automatically releases oil when animal rubs against cable.

3. All - Steel flexible cable has built - in square washers to hold oil — works it into hide and hair.



Sandhills All-Steel Cable Oilers are best for use on long haired animals and for feedlot use. All-Steel construction to last a lifetime. Gives economical, trouble-free service.

Price: \$60.00. F.O.B. Calgary.

LOUSE — GRUB KILLER

A dusting powder for killing lice and grubs (warbles) on **dairy and beef cattle**; lice and sheep ticks on **sheep and goats**; and lice on **poultry and hogs**.

To kill **grubs** on dairy and beef cattle, apply generously over entire back of animal when breather holes first appear and before grubs begin to drop. Rub thoroughly into hair, following directions carefully. Three or four applications at 10-day intervals will be required for complete control.

To control **lice** and sheep **ticks**, refer to page 53.

Prices: 1-pound, \$1.50; 2-pound, \$2.50; 5-pound, \$4.80. Transportation extra.

BRICON

Back Rubber Insecticide Concentrate

For the preparation of an oil solution of Korlan for use on back rubber rigs to control hornflies, and to aid in reducing populations of face flies and lice on beef cattle. Bricon is especially formulated to resist leaching from rainfall.



Mix 1 pint Bricon with 3 gallons of fuel oil, diesel fuel, or light mineral oil. Apply to back rubber according to recommendations on label. Re-saturate at two week intervals, or as needed in case of inclement weather. Begin use early in the season for more effective control of flies.

Price: 16-oz. container, \$3.60; 128-oz. container, \$20.00. Postage extra.

SYSTEMIC INSECTICIDES CONTROL CATTLE GRUBS

Recent development of new systemic insecticides revolutionizes grub control and gives promise of eradication of this troublesome and costly pest. Systemics are absorbed by the animal and, permeating the tissue, kill the cattle grub as it migrates through the body. Only **one treatment** is necessary.

Extensive experimental tests during the past several years by Federal, State, and private research organizations have demonstrated the effectiveness of systemic insecticides. Used as directed, they can be of tremendous value to stockmen.

Break the Grub Cycle. The objective of a grub control program is to break the heel-fly-grub life cycle. The heel fly lays eggs on the hair of the lower legs and flanks. Small larvae emerge from these eggs and burrow into the flesh of the animal. The maggots migrate through connective tissue and spend considerable time either in the gullet or spine. They finally appear in the back, cut through the hide, and drop out. The mature grub later hatches into a heel fly, starting the cycle all over again.

When to Use Systemics. Systemic insecticides should be used **after** the heel fly season is over and **before** grubs make their appearance in the back.

Caution: Systemic insecticides should be used only in accordance with directions on the product label. Do not use in any manner or under any conditions other than recommended by the manufacturer. **Read label carefully.**

FRANKLIN CO-RAL* (BAYER 21/199)

25% Wettable Powder

For preparing a **spray** or **dip** mixture to control the larval stages of the Common and

Northern Cattle Grub in beef cattle and non-lactating dairy cows; and for the control of lice, ticks, hornflies, and screwworms on beef cattle, horses, swine, sheep and goats.

Cattle grubs: For application as a **spray**, mix 4 pounds Co-Ral* in 20 gallons water. Ap-

ply at 400 pounds nozzle pressure. Animals should be wetted thoroughly, requiring about 1 gallon of spray mixture per animal.

Available in 4-pound packages. Write for Prices. Reg. Trademark Chemagro Corp.



INSECTICIDE SAFETY

Although modern insecticides are relatively safe, when used according to directions, there is some danger from improper use or undue exposure. The following rules will be helpful in avoiding loss of livestock or danger to human beings.

1. Use only in accordance with instructions. Do not mix stronger than label recommendations, except on competent advice.

2. Insecticides may be harmful if swallowed, or if concentrate comes in contact with the skin or membranes of eyes or mouth. Avoid such contact.

3. Avoid contact with vapors from insecticides. Mix in open air.

4. Keep insecticides labelled at all times. Keep out of the reach of children, animals, or pets.

5. Avoid contamination of food, feed-stuffs, or feeding utensils.

6. Do not wear clothing which has been contaminated by insecticides until washed, dry-cleaned, or otherwise decontaminated.

7. Bathe the entire body thoroughly following spraying or dipping of livestock, to remove any insecticide residue from the skin.

8. Know first-aid measures and antidotes for the insecticides you use.

9. Many modern insecticides are toxic to fish and water life. Avoid contamination of streams or ponds.

10. Use common sense in all spraying or dipping operations. Know what you are doing and take nothing for granted.

Insecticides bearing the Franklin label have been especially formulated for livestock use. Each formula is based on a study of the proper ingredients to offer the stockman the utmost in effectiveness for the use intended; safety in use; ability to mix readily with most waters (in cases of exceptionally hard water, it may be advisable to add water softener before mixing); to hold active ingredients in suspension; and economy of use.

There are many excellent insecticides in use today. Each has some specific quality which may make it superior to others; and each may have some undesirable feature which might have a bearing on its use. Franklin formulations are designed to offer stockmen the advantages of the best qualities of each for greatest effectiveness at the lowest possible price.

TOXAPHENE—LINDANE SPRAY CONCENTRATE

An emulsifiable concentrate to make a **spray** mixture, mix 1 gallon in 100 gallons of water, to control **hornflies**, **lice**, and **ticks** on **beef cattle**. Mix 1 gallon in 100 gallons of water to prepare a **spray** mixture to control **lice** and **keds** (sheep ticks) on **sheep** and **goats**, and 1 gallon in 150 gallons of water to control **fleeceworms**. Mix 1 gallon in 160 gallons of water to control **lice** on **hogs**. To prepare a **back-rubber** insecticide, mix 1 gallon in 8 gallons light furnace oil or distillate to control **hornflies** and aid in controlling **lice** on **beef cattle**. For spraying outside farm buildings, mix 1 gallon in 9 gallons of water.

Prices: 16-oz., \$2.10; 32-oz., \$3.00; 128-oz., \$9.00; 4-gallon can, \$38.00. Transportation extra.

FRANKLIN LINDANE 20%

An emulsifiable concentrate containing 20% Lindane for making a spray for the control of **lice**, and **ticks** on beef cattle, horses, hogs, sheep and goats, and also for the control of **sarcoptic mange** on hogs. Also for residual control of **stable** and **house flies**, **ants**, **roaches** and **mosquitoes** in dairy and farm buildings.

General Directions: To control lice and ticks on beef cattle, horses, hogs, sheep and goats and also Sarcoptic Mange on hogs, mix 8 oz. Lindane 20% with 20 gallons of water, except as otherwise directed. For use in buildings, mix 1 gallon Lindane 20% with 40 gallons of water. Read and follow directions carefully.

Prices: 4-oz., \$1.25; 16-oz., \$2.95; and 128-oz., \$18.00. Postage extra.

"Don't Feed Lice All Winter"

Experience indicates that the most effective time to treat for lice is in the late fall and early winter. If such a program is followed, the incidence of lice infestation will be greatly reduced and cattle will go through the winter in much better condition. Cows will bring stronger, healthier calves as a result.

LICE-TICK SPRAY

An emulsifiable concentrate for preparing a dip or spray solution to control **lice**, **ticks**, **hornflies**, **sheep ticks**, **mange mites** (sarcoptes and psoroptes), **gnats**, and **mosquitoes** on livestock (except dairy animals). One application should destroy adult lice and some eggs, and provide **residual fly control** for several weeks.

Also for the residual control of **house flies**, **stable flies**, and **mosquitoes** in or around farm buildings (except dairy barns).

Contains **DDT**, gamma isomer and other isomers of **Benzene Hexachloride**, and **Xylene** to comprise the active ingredients. Mixing directions on the label should be followed exactly, and cautions listed thereon should be carefully observed.

Prices: 16-oz., \$1.20; 128-oz. \$7.20; 4-gallon \$32.40. Transportation extra.

BACK RUBBER INSECTICIDE Residual Spray

The original DDT back rubber insecticide, in ever-increasing use for more than ten years. In special base; resists leaching from rainfall. To control **hornflies** on beef cattle and to help reduce **lice** infestation, apply Franklin Residual Spray Back Rubber Insecticide



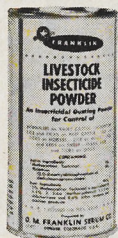
Residual Spray Concentrate (25% DDT) is mixed at the rate of 1 gallon with 4 gallons distillate (furnace oil) or very light mineral oil to provide the recommended 5% DDT mixture.

Prices: 1-gallon can, \$5.00; 5-gallon can, \$24.00. Transportation charges extra. In 45-gallon drum, \$4.25 per gallon, f.o.b. Calgary.

NOTE: Products containing lindane, listed elsewhere on this page, are not to be used on animals within the immediate 30-day period before slaughter. Do not use on sick, weak, emaciated, or lactating animals of any species.

LIVESTOCK INSECTICIDE POWDER

An insecticidal dusting powder for the control of hornflies on **dairy cattle**; hornflies, lice, and ticks on **beef cattle**; lice and ticks on **horses**; lice on **hogs**; lice and ticks (keds) on **sheep**; fleas, lice, and ticks on **dogs**.



This product contains active ingredients **Methoxychlor** Technical, 5%; and **Malathion**, 4% in suitable carrying agent.

DAIRY CATTLE: To control **hornflies**, apply one to two heaping tablespoonsful of Franklin Livestock Insecticide Powder to the back of the animal, taking care to cover entire topside, poll, neck and upper parts of sides. The powder should be rubbed lightly into the hair, to the skin, but do not rub into the skin. See caution below.

BEEF CATTLE: To control **hornflies**, use as directed. To control **lice** and **ticks**, apply thoroughly to entire animal with particular attention to those areas where parasites congregate. Repeat in 10 to 14 days, as necessary.

HORSES: To control **lice** and **ticks**, apply as instructed for beef cattle, above.

HOGS: To control **lice**, apply as on beef cattle. Also, powder may be scattered throughout bedding, taking care not to contaminate feedstuffs or water.

SHEEP: To control **ticks** (keds) and **lice**, dust thoroughly into fleece, being careful to cover entire animal.

DOGS: To control **fleas**, **lice**, and **ticks**, cover entire animal, rubbing lightly into hair to the skin, but avoid rubbing into the skin. Do not apply more often than once a week if repeat treatments are necessary. Powder may be dusted around kennel area to help keep down reinfestation.

CAUTION: Do not apply to lactating dairy animals within 5 hours of milking or during milking. Do not contaminate feed, milk, water, utensils, or fish-bearing waters. Observe additional precautions listed on the label.

Prices: 1-pound package, **\$1.50**; 5-pound package, **\$4.20**. Less in quantities. Postage extra.

LIVESTOCK INSECTICIDE BOMB

Contains the famous **MCK COW-TENT*** formula, for use on **dairy cattle**, **horses**, **dogs**, and **other animals**, for quick kill of **flies**, **mosquitoes**, and **gnats** on the animal; and to repel **hornflies**, **stable flies**, **mosquitoes**, and **gnats**. Provides quick kill and repellent activity against susceptible insects contacted by the spray.



For use on animals: Hold the bomb 18 to 24 inches from the animal and apply in sweeping motion from front to rear, including legs. Apply at the rate of a few seconds per animal, daily, or as necessary to obtain the desired control.

For use in barns or stables: Close all windows and doors. Fill room with mist. Keep windows and doors closed 15 minutes.

Price: 16-ounce aerosol container, **\$2.25** Postage extra.

*Registered Trademark McLaughlin, Gormley, King & Co.

FRANKLIN LOUSE—GRUB KILLER

A dusting powder for killing lice and grubs (warbles) on **dairy** and **beef cattle**; lice and sheep ticks (keds) on **sheep** and **goats**; and lice on **poultry** and **hogs** (caution: do not use on young pigs).



Directions for use:

To control **lice** on dairy cattle, beef cattle, and hogs; and **lice** and sheep **ticks** on sheep and goats. Apply generously and rub into the hair or fleece on all parts where lice or ticks are found or where they travel. Be certain that the powder contacts the skin in order to reach the parasite. Repeat every two or three weeks as needed. For **poultry lice**, dust thoroughly into feathers with particular attention to neck, under the wings and around the vent. Dust roosts and nests.

For grub control on cattle, refer to page 50.

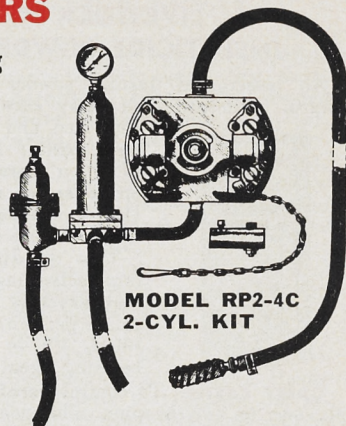
Prices: 1-pound package, **\$1.50**; 2-pound package, **\$2.50**; 5-pound package, **\$4.80**. Postage extra.

GOLDEN ARROW SPRAYERS

Featuring
2 models



**MODEL RP2-8C
4-CYL. KIT**



**MODEL RP2-4C
2-CYL. KIT**

MODEL RP2-8C — 4-CYL. KIT

Capacity 8 imp. gals. (10 U.S.) per minute at pressures up to 500 pounds. Contains all the requirements for P.T.O. operation. 25' high pressure hose included. Gun extra.

Price \$267.50

MODEL RP2-4C KIT

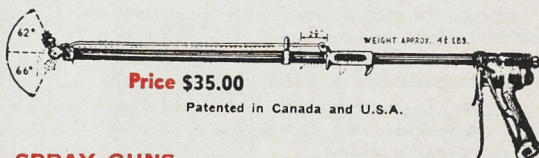
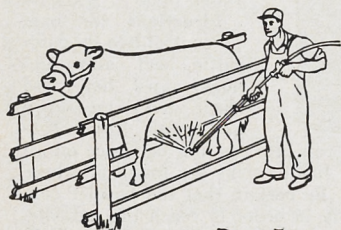
Capacity 4 imp. gals. (5 U.S.) per minute at pressures up to 400 pounds. Contains all the requirements for P.T.O. operation. 25' high pressure hose included. Gun extra.

Price \$197.25

Both of the above kits can be supplied with 50' of High Pressure Hose instead of 25' for an additional \$18.50.

Golden Arrow Pumps include permanent life type of diamond honed ceramic cylinder liners. Piston pumps are positive displacement and deliver the rated volume of capacity at high or low pressures.

Model 200 Bug Master Gun

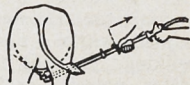
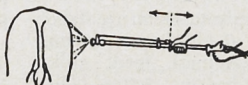
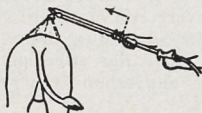


Price \$35.00

Patented in Canada and U.S.A.

SPRAY GUNS

Model H-72 with extra discs.....	\$12.00
Model 100 trigger type with extra discs.....	19.50
Bug-Master — Directional control with extra discs.....	35.00



This outstanding gun provides for complete animal coverage in the minimum of time, resulting in the savings of chemicals with maximum efficiency. Underline spraying is the most effective application, particularly for the skin absorption of systemic chemicals. Shipping wgt., 7 lbs.

PHENOTHIAZINE FOR WORMING

Phenothiazine is widely and effectively used for the control of many types of internal parasites of livestock. Primarily developed for control of parasites in sheep, its use has been expanded to the cattle industry where investigations disclosed that internal parasites cause the loss of millions of dollars annually to cattlemen. Aside from the fact that it is effective against a large number of internal parasites, phenothiazine possesses the advantage, over other types of wormers, of being relatively non-toxic and may be administered by individual dosing or by mass feeding.

Among the many internal parasites that may be controlled by Franklin Phenothiazine are:

In Sheep & Goats: Common and lesser stomach worms; hook worms, nodular worms; large mouthed bowel worms.

In Cattle: Stomach worms; nodular worms; hook worms.

In Horses: Large and small strongyles.

In Hogs: Nodular worms; and partial effectiveness against ascarids.

Sheep

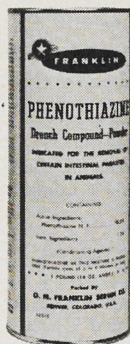
The recommended therapeutic dose for adult sheep and goats (over 60 pounds) is 25 grains, or about 1 ounce of phenothiazine powder. Lambs or kids (under 60 pounds) should receive about 12½ grams or ½ ounce. This dosage may also be administered by means of boluses containing 25 or 12½ grams of phenothiazine; in drench form containing 12½ grams per fluid ounce; or by mixing phenothiazine with feed in the above amounts.

To help keep parasitism at a minimum, phenothiazine may be fed free-choice (mixed 1 part with 9 parts salt or mineral) and kept before animals throughout the year.

Cattle

Recent experiments with cattle show that parasitism is much more widespread than was formerly thought. Although cattle do not show symptoms of extreme parasitism as do other animals, worm infestations may retard gains and affect production to the point that severe economic losses are suffered. Such parasitism is often referred to as "slow drag."

The therapeutic dose of phenothiazine powder for cattle is 10 grams (about ½ ounce) to each 100 pounds of body weight, with maximum dose being limited to 62½ grams (about 2¼ ounces). In severe infestations, cattle should be treated in the spring and again in the fall. In some areas, a follow-up dose about 21 days after initial dose,



to eliminate parasites which have reached maturity since first treatment, is recommended. Treatment doses as described above may be administered in drench form or in bolus form.

In addition to the treatment dose, cattle should receive continuous low-level phenothiazine treatment throughout the year. The recommended low-level dose is 1.5 to 2.0 grams phenothiazine per day, which can be provided by mixing 1 pound phenothiazine powder with 9 pounds salt or

9 to 10 pounds minerals.

Horses

The recommended dose for horses is about 1 ounce phenothiazine powder for a 1,000-pound animal. Since horses are less tolerant to phenothiazine than other animals, it is suggested that the dose be mixed with feed and fed at the rate of 5 grams per day for 5 or 6 days.

Hogs

Phenothiazine may be fed to hogs with regular feed at the rate of 0.1 grams phenothiazine per pound of body weight.

Particle Size Important

Recent experiments show that the finer the particle size of phenothiazine used, the more effective will be the results obtained. Particles of 10 microns have proved to be much more effective than larger size particles.

The phenothiazine in Franklin Phenothiazine Powder and Phenothiazine Drenches is "microfine" consisting of particles of 9 to 5 microns or less.

For description of Franklin phenothiazine products, see page 56.

MIXED INFECTIONS IN SWINE

Mixed infections in swine are not uncommon and may be classed in a general way as of two common types, one of which is an involvement of the respiratory organs and is usually associated with Hemorrhagic Septicemia (Swine Plague).

The organisms most frequently found associated with lung infections in hogs are Pasteurella multocida, Salmonella choleraesuis, pyogenic Streptococci, and Corynebacteria.

The other form of infection involves the intestinal tract and somewhat simulates Hog Cholera in general symptoms and appearance.

The organisms most commonly found associated in infections of the intestinal tract of swine are Salmonella choleraesuis, Salmonella schotmulleri, Escherichia coli, and Pasteurella multocida.

FRANKLIN MIXED BACTERIN (Porcine) Formula 1

This formula consists of chemically-killed bacteria produced by the washed culture method.



Pasteurella multocida,
Types I, II, and III. . . . 30%
Salmonella choleraesuis. . . 30%
Streptococcus (pyogenic). 20%
Corynebacteria. 20%

Uses: As an aid in preventing conditions attributed to the organisms named in the formula.

Dosage: For healthy swine, 2 cc. Using aseptic precautions, inject under the skin prior to the time such infections may occur. A second dose, double or more, in 3 to 5 days should increase the initial effect. **Price:** 20-cc bottle (10 normal doses), \$1.35.

FRANKLIN MIXED BACTERIN (Porcine) Formula 2



This formula consists of chemically-killed bacteria produced by the washed culture method.
Salmonella choleraesuis. . . 30%
Salmonella schotmulleri. . 30%
Escherichia coli. 10%
Streptococcus (pyogenic). 10%
Pasteurella multocida,
Types I, II, and III. . . 20%

Uses: As an aid in preventing conditions attributed to

the organisms named in the formula.

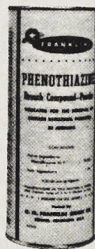
Dosage: For healthy swine, 2 cc. Using aseptic precautions, inject under the skin prior to the time such infections may occur. A second dose, double or more, in 3 to 5 days should increase the initial effect. **Price:** 20-cc bottle (10 normal doses), \$1.35.

FRANKLIN PHENOTHIAZINE PRODUCTS

Franklin offers two phenothiazine products for the control of internal parasites in livestock.

PHENOTHIAZINE POWDER "Microfine"

Especially compounded for mixing with water at the rate of 12½ grams per fluid ounce, to prepare a drench. May also be mixed with feed; or mixed with salt or minerals in low-level, free-choice feeding.

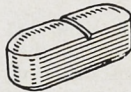


For computing dosage, one ounce by weight equals 28.35 grams. Each package contains a small paper cup; when level full, contents equal approximately one ounce. See page 55 for dosage recommendations.

Prices: 1-pound, \$2.25; 5-pound, \$9.60. Postage extra. Also available in 50-pound bag, \$1.25; per pound.

PHENOTHIAZINE BOLUSES

For oral administration to **sheep, cattle, horses and mules** with a balling gun or capsule forcep (see page 80).



For **sheep** up to 60 pounds the dosage is 12½ grams; over 60 pounds, 25 grams.

Cattle, 10 grams per 100 pounds of body weight with maximum dose 62½ grams for animals 500 pounds or over.

Horses and mules weighing 1,000 pounds, 25 grams; 1,500 pound animals, up to 50 grams. **Note:** Horses and mules are less tolerant to phenothiazine than are other animals; therefore, it may be preferred to administer phenothiazine in powder form, mixed in the feed at the rate of 5 grams per day for 5 or 6 days.

12½-gram boluses, per box of 50, \$4.00. Postage extra.

VETERINARY INSTRUMENTS

Reliable quality products for stockmen's use. The more popular items are shown here, but if you don't see what you want, let us know as we have available all types of Veterinary Instruments.

OPERATING LANCE OR SCALPEL



Used for making incisions for tie knives and for other similar purposes.

Heavy, renewable blades of highest quality surgical steel, finished to sharpest razor edge.

The handle is of sturdy steel and the blades are easy to attach and detach. An economical instrument of many uses.

Price: One handle and six blades, **\$2.60**; handles separate, **\$1.75**; blades separate, **\$1.95** per dozen. Postage extra.

ARTERY FORCEPS



A handy instrument around livestock—to pick up an artery end in wounds—to pull an artery in dehorning—to pick up tissue for suturing in operations.

Price: **\$2.65**. Postage extra.

SURGICAL NEEDLES

Emergency operations made conveniently by the stockman with his own needles. Curved for easy use. All sizes and lengths. Quality material for long life. Keep a supply within easy reach.

Price: **40c** and **30c** Postage extra.

PIG TOOTH NIPPER



Nickel Plated. Length 6 inches. **Price:** **\$3.00**. Black, Imported, **\$1.50**. Postage extra.

SUTURES

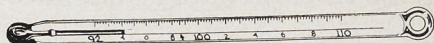
Linen: Fine, Medium, & Coarse:

per card **60c**

Catgut: No. 1, No. 2, & No. 3; per tube **\$1.25**
Postage extra.

Umbilical Tape is often used to repair tearing or lacerations of external genitals of cows or heifers following calving. See page 62.

VETERINARY THERMOMETERS



Certified; 4 inches long; small round bulb for easy insertion and minimum breakage; in hard rubber case.

Price: **\$1.20**. Postage extra.

CASTRATING

KNIFE

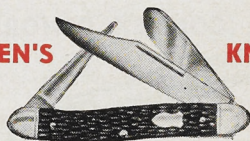


Widely used by stockmen. Has two blades of finest knife steel carefully tempered.

One castrating blade 2 inches long and one hook or lance blade the same length. Nickel handle. **Price:** **\$1.75**. Postage extra.

STOCKMEN'S

KNIVES



Boker No. 705, King Cutter, 4 inches over-all, indestructible imitation stag handles, large clip, spey and leather punch blades. A knife of the finest quality. Each, **\$4.50**.

Boker No. 755, as above, but 3-3/8" over-all, indestructible imitation stag handles, large clip, spey and leather punch blades. Highest quality knife in convenient pocket size. Each **\$4.00**.

FRANKLIN DEHORNING SAW



An exclusive pattern, especially designed for dehorning. The stiff back and tapered blade prevent warping or buckling while in use. This saw has nine teeth to the inch, and the special set of the teeth helps to eliminate clogging with blood and tissue during operation. Handle is extra large, designed to prevent the hand from sliding upward, and set on a direct line with the cutting edge. Length of blade, 14 inches. **Price: \$8.60**, postage extra.

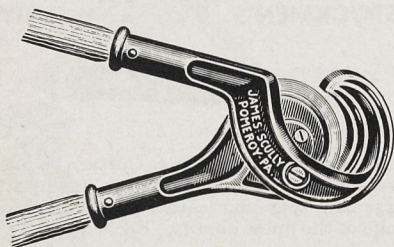
TUBE CALF DEHORNERS



For removing horns on small calves up to about four months of age. Operation is very simple. Use the size dehorner that exactly fits the horn at the base. Place the cutting edge straight down over the horn; mash down and twist first one way, then the other, until you have cut to the skull; then turn the dehorner at a 45° angle and shove and turn the cutting edge under the horn.

Size No.....	1	2	3	4
Diameter, inches	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$
Each.....	\$2.05	\$2.05	\$2.05	\$2.05
	Postage extra.			

CONVEX DEHORNER



Cutting blade works with sliding motion. **Price:** Large size, for grown cattle, **\$23.50**; Jr. size for calves and goats, **\$19.00**. Postage extra.

FRANKLIN DEHORNING PASTE

Franklin Dehorning Paste has given excellent results over a period of many years, and has been used extensively by those stockmen who realize the advantages of dehorning early. The smooth, shapely heads which result from the use of this product go far toward bringing the stockman a higher price for his calves.

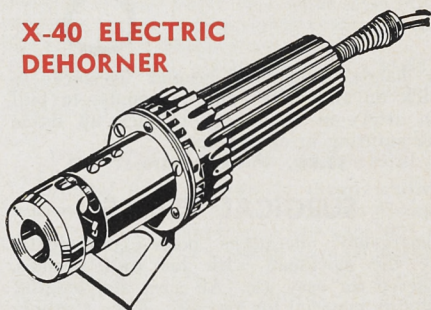


Easy to use under range conditions or on the farm. A small amount of the paste applied with a knife blade or small wooden paddle to the

horn button produces a chemical action which kills horn growth. A small scab will appear, which will drop off after several days. **Caution:** This is a caustic material which will destroy animal tissue. Do not allow the paste to contact any parts other than the site of the horn button.

Prices: 1¼-ounce jar (sufficient for 15 to 25 head), **90c**; 3½-ounce jar (sufficient for 40 to 75 head), **\$1.70**. Postage extra.

X-40 ELECTRIC DEHORNER



Dehorning with a hot iron has long been recognized as an efficient and practical method, eliminating the fresh wound left by surgical operation and making the site less attractive to flies and other insects.

The X-40 Electric Dehorner offers the additional advantage of heating the iron with electricity, eliminating the need for building a fire, thus reducing fire hazard.

Important: Allow 20 to 30 minutes to pre-heat before use.

Price: Each, **\$13.20**. Postage extra.

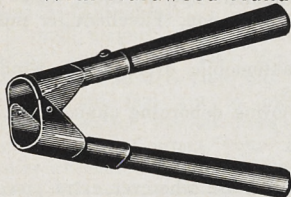
COPPER DEHORNING IRONS

For stopping growth of horns on small calves by use of heat. These irons have cupped face to fit over horn buttons. 42-inch handle.

Available in three sizes — small, medium, and large. Per iron, **\$3.75**. Postage extra.

BARNES CALF DEHORNER

With Hardwood Handles

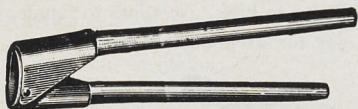


The cutting blades are of high grade tool steel with handles of choice hardwood.

In dehorning calves, the aim should be to take a ring of skin off with the horn and scoop out the horn button to prevent a stub growing out. This tool accomplishes this result, does a good clean job and has proven a thoroughly practical instrument for dehorning calves from 2 to 8 or 10 months of age.

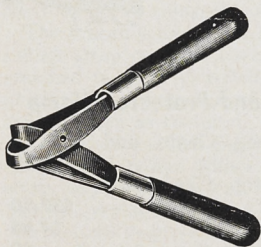
Weight $1\frac{1}{4}$ pounds. **Price: \$3.00**. Postage extra.

With Iron Handles



A larger size dehorner of the same type but of heavier construction with iron handles. **Price: \$4.20..** Postage extra.

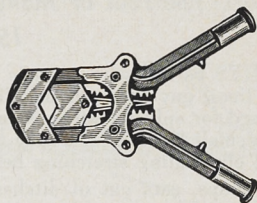
SUPERIOR DEHORNER



A quick, humane, safe way to dehorn calves up to 6 months. Does a clean, neat job, cupping the horn. Edges are of tempered tool steel that cut without crushing. Weight $1\frac{1}{4}$

pounds, length $13\frac{1}{2}$ inches. **Price: \$4.75**. Postage extra.

FRANKLIN KEYSTONE TYPE

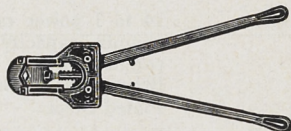


Outer edge of the cutting knife is pointed and its surface is parallel to that of the cutting edge. This makes the knife stronger and less liable to crack.

Franklin Keystone Dehorner — complete with long handles: **\$25.00**.

Extra blades: each **\$2.40**. Postage extra.

LEAVITT "V" BLADE DEHORNER



Most powerful leverage known. The famous "V" Blades cut all around the horn.

No. 2—For medium to large size horns. Will also do small work. Opening 3x3 inches, length 3 feet, weight about 13 pounds. **Price: \$17.20..** Postage extra.

No. 3—For large horns. Will also do the work of the No. 2 size. Opening 4x4 inches, length 3 feet 2 inches, weight about 15 pounds. **Price: \$19.00**. Postage extra.

Proper care of dehorning wounds will pay dividends to the careful stockman. Apply Blood Stopper at the time of dehorning and keep treated animals under observation until danger of infection or infestation by screwworms is past. Medicated preparations for this purpose are listed elsewhere in this catalog.

MAASDAM POW'R-PULL

The Tool of Many Uses — Stretcher—Hoist—Puller

1500 Pounds Capacity

STRETCHES barbed wire, electric or woven wire in building or repairing fence, telephone or power lines, guy wires, clothes lines. When equipped with extra Hand Protector Clamp may be used for splicing wires. Controlled ratchet permits slacking off as well as taking up slack. On small fencing jobs, such as hay stack fences, the entire job may be done with one operation, eliminating stretching between posts.

PULLS stumps, cars out of ditches, trailers or other equipment into position, loads onto trucks or any objects requiring a steady controlled pull up to $\frac{3}{4}$ ton. Excellent for pulling calves in difficult obstetrical cases.

HOISTS beeves and hogs for slaughtering, motors in automobile overhauling, windmill casing and sucker rods, and uncounted other heavy objects.

MOVES small buildings, machinery into place. Ideal for moving dehorning chutes, sprayers, etc., into position.

BINDS down loads of hay or lumber for safe hauling.

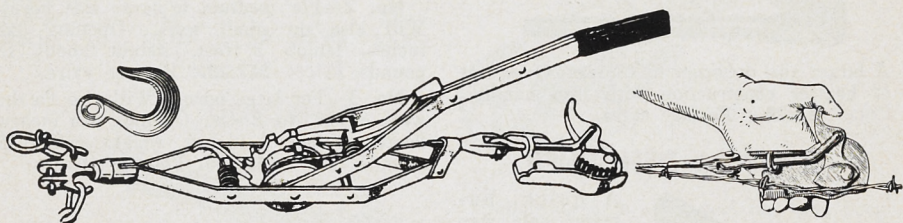
These are but a few of the uses. The Pow'r-Pull will find a use wherever extra power is needed. Ranchers, farmers, garage men, electricians, plumbers, contractors, truckers, all find the Pow'r-Pull indispensable to their work.

LIGHT..... Weighs only 6 pounds, $\frac{1}{5}$ to $\frac{1}{3}$ as heavy as comparable hoists and pullers. The POW'R-PULL may be used all day, providing easy power with less fatigue.

STRONG..... 14 to 1 power ratio provides up to 80% more pull per pound. 1,500 pounds capacity guaranteed. Tested to 50% overload. Soundly engineered, it is made of High Tensile Manganese Bronze, Aluminum Bronze, Navy Bronze, Duraluminum, Aircraft Cable, and Cadmium Plated Steel.

VERSATILE..... Fast and dependable on everyday jobs; may be converted easily and quickly for different uses. No chains to kink. No ropes to tangle.

ECONOMICAL..... Saves time and man power to pay for itself many times.



Maasdam Pow'r-Pull

Hand-Protector Clamp

Price: No. 72 Pow'r-Pull, complete with Hand Protector Clamp, Chain, and 6-foot Cable.....	\$30.00
No. 108 Pow'r-Pull, complete with Hand Protector Clamp, Chain, and 9-foot Cable.....	\$32.00
Hand Protector Clamp only.....	\$4.00
Utility Hook, $\frac{1}{4}$ -inch.....	.40
Extra 6-foot Cable.....	\$3.00
Extra 9-foot Cable.....	\$4.00

Hardware Disease is just what its name implies. Many cattle die from swallowed bits of wire, nails, screws, and other assorted metal objects, with the ailment being attributed to other causes. Cattle cannot separate bits of metal in their feed, so everything is swallowed. Feed makes its first stop in the ruminant's paunch; however, pieces of metal, because they are heavy, drop into and lodge in the second stomach (reticulum).

A small magnet, administered with a balling gun, drops into the second stomach and attracts these bits of metal so they are less apt to pierce the stomach walls. **Rumen magnets** are listed below. Contact your Franklin dealer or nearest Franklin sales office.

RUMEN MAGNET

To be administered to cattle for prevention of "**hardware disease**." Administered with a balling gun, the magnet drops into the second stomach to attract metal objects.

Price: Each, **\$2.15**. Postage extra.

FRANKLIN CALF PULLER ATTACHMENT

This attachment to be used with the Maasdam Pow'r-Pull to assist in the delivery of calves in difficult obstetrical cases. The Pow'r-Pull (see page 60) can be quickly and easily attached to the Calf Puller attachment which consists of a light-weight breech spanner with strong rubber strap which is easily cleaned and disinfected, and a tubular steel rod consisting of two sections which are easily and firmly joined by means of a threaded collar. This knock-down feature makes the attachment easier to transport when not in use.

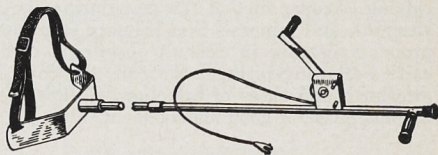
The breech spanner fits around the lower hind quarters of the cow, being supported by the rubber strap over the back. An obstetrical chain is looped around the feet of the calf and attached to the Pow'r-Pull cable by means of a specially designed hook which is mounted on the clevis at the end of the cable. As the mother begins the delivery, necessary assistance can be given as required.

The Franklin Calf Puller attachment makes the Pow'r-Pull an even more versatile tool, and a combination which the cowman should not be without. **Price:** Breech spanner with strap, sectional steel rod, 30-inch obstetrical chain, and special hook for obstetrical chain, **\$30.00**, postage extra. Also available, 60-inch obstetrical chain, **\$2.00**. **These prices do not include Pow'r-Pull.**

The Franklin Calf Puller attachment as illustrated above, shows the Maasdam Pow'r Pull mounted. **The Pow'r-Pull is priced separately on page 60.**

M-T CALF PULLER

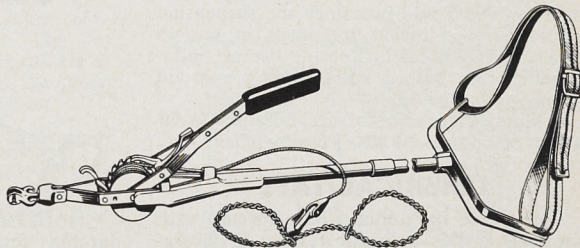
An economical and sturdy device for use in delivering calves in difficult cases.



Set consists of breech spanner with heavy web strap; 2-section heavy-duty pipe with cable guard, drum and crank, with $\frac{1}{8}$ " pre-formed airplane cable; 30-inch obstetrical chain; and grab hook for chain.

Price: Set as described, **\$30.00**; postage extra.

For information concerning valuable calving aids, please refer to page 62.



FRANKLIN CALVING AIDS

A very important part of good ranch management is to get a high-percentage crop of strong, healthy calves and to provide adequately for the cow before, during, and following calving. Proper diet of the cow during the pre-natal period by providing nourishing feeds, vitamins, and minerals is a primary step toward the ultimate goal. At the time of delivery, proper assistance in difficult obstetrical cases most often will result in saving the cow and calf. Following birth of the calf, the cow should be closely observed for signs of retained afterbirth and cases of infection. Following are listed some of the products Franklin offers for this phase of good management.

SULFA-UREA UTERINE BOLUSES

Franklin Sulfa - Urea Uterine Boluses are especially formulated to aid in cases of infections of the uterus associated with retained after-birth in large animals. Each bolus contains 33 grains **Sulfanilamide**, 5 grains **Sulfathiazole**, and 202 grains **Urea**.



Using aseptic precautions, insert three or more boluses deeply into the uterine cavity. If the os uteri is partially

closed, dissolve Sulfa-Urea Uterine Boluses in warm water and introduce the suspension as a douche. Repeat treatment in one to three days if needed. Routine use of Sulfa-Urea Uterine Boluses after calving may aid in preventing infection.

Price: Container of six boluses, **\$1.60**. Tin of 36 boluses, **\$6.00**. Postage extra.

UMBILICAL TAPE

Carbolized, in $\frac{3}{8}$ -inch width, for use with surgical needles to repair tearing or lacerations of external genitals of cows or heifers following calving.

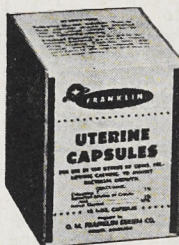
Price: In sterile jars, 20-yard length, **\$3.20**. Postage extra.

OBSTETRICAL SAW WIRE

Specially woven stainless steel wire to aid in dismemberment and removal of dead fetus. Place loop or wire around parts to be severed; draw wire back and forth by aid of special handles.

Prices: 32-foot coil stainless wire, **\$4.65**; handles, per pair, **\$1.50**. Postage extra.

FRANKLIN UTERINE CAPSULES



For use in the uterus of cows following calving, to inhibit bacterial growth and to aid in removal of retained placenta. Insert three Uterine Capsules into the uterus, working one into each horn of the uterus and one into the main cavity. **Prices:** Box of 3 capsules, **\$1.50**; Box of 12 capsules, **\$5.00**. Postage extra.

OBSTETRICAL CHAIN AND HOOK



CHAIN is of high-quality material and durable for heavy-duty obstetrical use. Nickel finish facilitates cleansing and sterilizing. 30-inch, **\$1.50**. 60-inch, **\$2.00**.

HOOK, nickel finish, is designed to grasp chain firmly at any link. **\$1.95**. Postage extra.

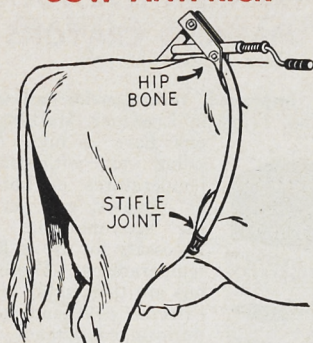
OBSTETRICAL GLOVES WITH SLEEVE

In many difficult obstetrical cases, it is necessary to give the mother more assistance than can be provided by a mechanical device. In such instances an obstetrical glove with sleeve is a valuable asset to guard against infection. We offer two types:

Surgeon's latex glove and shoulder-length sleeve, for repeated use, sizes 9, or 10 for right or left hand, **\$9.75** each.

DISPOSABLE plastic glove with shoulder-length sleeve, universal size. Roll of 50, **\$5.70**. Prices are postage extra.

COW ANTI-KICK



This device provides the safest, most humane way to stop kicking and to subdue wild and unruly animals. Adjusts to any size animal and is quick and easy to apply. When properly adjusted, pressure on nerves and muscles which control kicking makes back legs immobile.

This instrument is especially useful for training heifers with first calves; for controlling nurse cows; for controlling animals during examination, surgery, or artificial insemination.

The Cow Anti-Kick is ruggedly constructed of heavy-duty materials. The adjusting crank operates in cylinder of oil to provide ease of operation and to keep threaded parts free of dirt and debris.

Price: Each, **\$21.50**. Shipping Weight, 10 pounds. Postage extra.

OBSTETRICAL SNARE

Franklin offers a utility snare to assist in the delivery of calves in difficult obstetrical cases.

A loop is formed by the cable, to be placed over the part. Draw the loop snugly around the part, and exert pressure as required.

The Franklin Obstetrical Snare is a valuable instrument in emergency.

Price: Each, **\$4.00**. Postage extra.

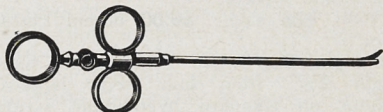
For information concerning other valuable calving aids, please refer to pages 61 and 62.

COW WOMB SUPPORT

The Storz Cow Womb Support consists of a harness and sling constructed of heavy, durable webbing together with medicated truss ball. Write for more complete information and leaflet.

Prices: Complete unit with truss ball, **\$35.00**; extra truss ball only, **\$3.75**; extra sling only, **\$7.75**. Postage extra.

TEAT SLITTERS



Three-ring single blade.

Price: **\$3.75**. Postage extra.

FRANKLIN EWE MARKER

Record the service of rams with Franklin Ewe Marker. Reservoir in pad holds liquid paint mix with face of pad being porous to permit paint to mark ewe when serviced. Paint mix available in red, blue, or green.

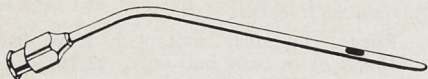


Prices: Pad, harness, and one envelope of paint mix (choice of color), **\$6.75**; Harness only, **\$2.80**; Pad only, **\$3.50**; Paint mix to add to one pint SAE30 motor oil, **80c** per envelope. Postage extra.

UDDER INFUSION TUBES

For use in the injection of medications into the teat canal.

Bent, Slip Type



Bright nickel finish, length 2½" from curve. Fits large slip adaptor on standard hypodermic syringe.

Price: 50c each; \$6.00 dozen. Postage extra.

Straight, Slip Type: Bright nickel finish, length 2½" from hub. Fits large-slip adaptor on standard hypodermic syringe.

Price: Each, 40c. Postage extra.

MILKING TUBES

Self-retaining; bright nickel finish; indispensable for use with sore and inflamed teats and udders. Available in three lengths. 2-inch, 2½-inch, and 3-inch. State length desired when ordering. **Prices:** each, 30c in lots of a dozen assorted lengths or a dozen of any one length, per dozen, \$3.00. Postage extra.

Adjustable Milking Tube, self-retaining style, bright nickel finish, adjusts to any length from 2 to 4 inches. Each, 55c. In lots of a dozen or more, per dozen, \$5.40. Postage extra.

CATTLE TROCAR



For relieving bloat in cattle. 5½-inch Cattle Trocar with metal handle and irrigating canula, \$2.60 complete. Irrigating canula only, \$1.15. 5½-inch Cattle Trocar with wood handle and plain canula (also used as bull nose punch), \$1.75 complete. Plain canula only, 80c. Postage extra.

FLEXIBLE PIG FORCEP



This is the Severus type snare, but with flexible shaft to facilitate use in delivering pigs. Nickel plated, easily sterilized.

Price: Each, \$4.75. Postage extra.

FRANKLIN LIVESTOCK MARKING CRAYONS

An improved formula for all-weather marking. Franklin Livestock Marking Crayons

have a high melting point to withstand the temperatures of hot-weather climates, and yet retain the easy-marking quality necessary for use in freezing temperatures. These crayons are thoroughly tested in extreme cold and heat for uniform consistency.

Light strokes with these oil-base crayons make bright, legible marks on hair or wool. Even under adverse weather conditions, marks will not rub off or blur, yet

can be readily removed by scouring during processing.

Franklin Livestock Marking Crayons are packaged in perforated cardboard sleeves to provide cleanliness in handling. Perforated sections of the sleeve can be removed as the crayon wears down.

Available in six bright, rich colors: **Red, Blue, Black, Green, White, and Yellow.**

12 of one color.....	\$3.50
12 assorted colors.....	\$4.00
Less than 12, each.....	.35

Postage extra.

FRANKLIN SHEEP BRANDING PAINT

Franklin Sheep Branding Paint is long-lasting, in bright colors. Ready to use. May be applied with brush or with special aluminum paint branding iron (see page 55). Mark from 500 to 600 head with a single gallon.

Black and Red: 32-oz. container, \$2.10, 128-oz. container, \$7.00;

Blue, Green, Orange, Yellow: 32-oz. container, \$2.20; 128-oz. container, \$7.60.

FRANKLIN NECK CHAINS

For Marking Cattle



Made of twist link coil chain and fastened securely with heavy key ring type fastener. May be adjusted to any link.

Number tags are of brass, opening equipped with hardened brass grommet or liner which increases wearing qualities two- to three-fold. Distinct engraved, black enamel - filled numbers

easily read at a distance. Specify numbers wanted. Special letters and numbers can be engraved on request.

Prices: Complete set consists of 40-inch chain, numbered tag, and fastener. Shipping weight 1-pound per set.

Less than 25 sets, per set **\$1.85**

26 and less than 100, per set **\$1.75**

100 sets or more, per set **\$1.70**

Brass Tags Only, Numbered:

Less than 25 tags, each **\$1.10**

26 and less than 100, each **\$1.05**

100 or more, each **\$1.00**

40-inch Neck Chain, each **.95**

Twist Link Coil Chain, per foot **.25**

Heavy Key Ring Type Fasteners, ea. **.20**

Note: Franklin's new Key Ring Fastener easily installed without use of tools.

Prices shown above are postage extra.

BRANDING IRONS

For Sheep Marking Paint



Constructed of aluminum, especially designed for paint branding sheep, and for temporarily marking other animals. Available in numerals or letters, as follows:

4-inch figures, 0-9 (9 irons), **\$5.75**, set;

2½-inch figures, 0-9 (9 irons), **\$7.00**, set;

2½-inch or 4-inch individual figures or letters, **90c** each. Postage extra.

FRANKLIN ELECTRIC PROD POLE



The **new** and **improved** Franklin Electric Prod Pole will make the handling of live-stock easier, safer, and more economical. Particularly useful in operations such as loading or unloading, dipping, working animals through chutes, etc. One light touch with the Franklin Electric Prod Pole produces a surprising electrical shock sufficient to cause the animal to move, with no injuries such as result from the use of a club or other prodding device.

Case is of durable metal tubing. Entire instrument weighs 2½ pounds complete with five photoflash batteries, and is 25 inches long. Easy to handle. Has removable power unit (coil) which may, in emergency, be easily replaced with a spare.

Price: complete with batteries, **\$15.00**; coil only, **\$9.00**. Postage extra.

Extra batteries, 35c each. Postage extra.

FRANKLIN HOG HOLDER



Sometimes known as the "Iowa Hog Holder." 24-inch shaft of tubular steel with 21-inch loop of airplane cable. Has additional use in obstetrical work **\$6.00**, postage extra.

FRANKLIN HORSE TWITCH



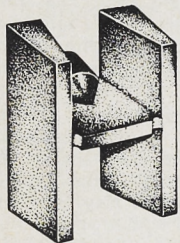
To aid in handling unruly horses. Hardwood handle with nickel-plated chain and metal fitting. **\$3.00**, postage extra.

FRANKLIN COPPER BRANDING IRONS

Franklin copper branding irons are preferred by many stockmen for their even heating and heat-retaining properties.

Each character is designed, as nearly as possible, to burn a clear, legible brand. Angles are notched to help reduce blotching. Cast with $\frac{1}{4}$ -inch face tapering to $\frac{1}{2}$ -inch base to give body to the iron and to retain heat. Handles are 42 inches long, constructed of iron rod with large hand loop to provide firm grip.

Standard numerals, letters, and circles in 2-inch, 3-inch, and 4-inch sizes; and bars and quarter-circles in 2-inch, 3-inch, 4-inch and 6-inch sizes are carried in Calgary stock for immediate shipment at standard prices listed below.



Reverse letters, rafters, triangle, diamond, half-circle, heart, and

mill iron are not carried in stock but are available after short delay at "standard" prices.

STANDARD COPPER BRANDING IRONS

2-inch: Letters, numerals, characters, bar quarter circle, each **\$4.25**; set of numerals 0 to 9 (6 and 9 interchangeable) **\$34.50**.

3-inch: Letters, numerals, characters, bar, quarter circle, each **\$7.00**; set of numerals 0 to 9 (6 and 9 interchangeable) **\$54.50**.

4-inch: Letters, numerals, characters, bar, quarter circle, each **\$9.00**; set of numerals 0 to 9 (6 and 9 interchangeable) **\$70.00**.

6-inch: Bar, quarter circle, each **\$9.00**. All prices, postage extra.

CAUTION

Copper alloy castings will not withstand exposure to rapid, extreme heat as often encountered in a forge, weed burner, blow torch, and the like. Care should be taken to avoid too sudden or prolonged, excessive exposure to fire. Avoid quick cooling of hot irons by submerging in oil, water, or snow. Franklin copper branding irons are guaranteed against faulty materials and workmanship, but are NOT guaranteed against over-heating or careless use. With care, they will give long, excellent service.

Special Copper Brands

Franklin copper branding irons can be made to your specifications at a reasonable price. Care should be taken to design the brand as simply as possible, avoiding small enclosed areas or sharp angles. Scale drawing should accompany order, showing exact dimensions and width of face. Three-character brands, or large two-character brands which cover a wide area are not recommended because it is difficult to obtain satisfactory results from such an iron.

Normally, special irons can be completed for shipment in two to three weeks after receipt of order. Price of special branding irons is determined by the longest dimension of one character, or in the case of irons involving bars, quarter-circles, etc.—by the length.

	1-Character	2-Character
2-inch, each.....	\$14.75	\$19.75
3-inch, each.....	17.50	25.00
4-inch, each.....	20.75	27.00

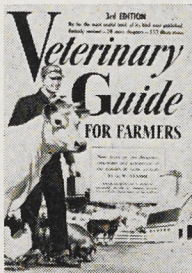
Above prices F.O.B. Calgary, Alberta.

If more than one iron is ordered from the same pattern, each additional iron will be priced at 20% less than shown above.

VETERINARY GUIDE FOR FARMERS

(New Enlarged Edition)

With more than a quarter of a million copies in print, Veterinary Guide for Farmers has outsold every book of its kind published.

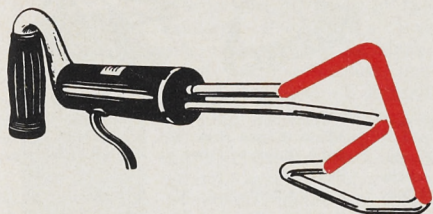


This new edition has twenty percent more reading matter than the preceding one. All the latest methods in disease treatment and prevention have been included. As with previous editions, the book is written in the simple style of a gram-

mar School Reader, yet has the accuracy of the finest college textbook.

Price, each, \$5.95.

FRANKLIN ELECTRIC BRANDING IRON



Better branding with electricity is yours with the new Franklin Electric Branding Iron. Plugged into 110-115 volt outlet, the iron heats to branding temperature within 1½ minutes. Heat recovery is rapid following branding of each animal. The tubular rod heating element permits open design which, together with constant heat, lessens danger of blotched brands. The element is non-corrosive and should remain serviceable for years with reasonable care. Franklin Electric Branding Irons are fully guaranteed against faulty workmanship and materials. Elimination of need for a branding fire reduces fire hazard, cuts labor costs.

Ordering instructions: Prepare a drawing of the exact design and size of your brand as you wish for it to appear on the animal. Because of physical limitations in bending the element, most angles must be rounded to an inside radius of ⅜-inch. Each iron is made to order, and can usually be completed for shipment within 48 hours after receipt of order at our shop. Allow about 10 days for delivery.

The following list is representative of prices which apply to most standard characters, and may be used to estimate the cost of your branding iron. Prices will be confirmed upon receipt of your order.

Bar; Quarter-circle; Broken Bar.....**\$32.50**
Letters or Numerals, 3½" or 4".....**39.50**
Half-circle; Circle; Rafter;

Mill Iron; Diamond; or similar single characters, 3½" or 4".....**39.50**

2-Character Iron, 3½" or 4" characters on one handle.....**49.50**

3-Character Iron, 3½" characters on one handle.....**59.50**

3-Character Iron, 4" characters on one handle.....**69.50**

Above prices F.O.B. Calgary, Alberta.

Note: Due to limitations in bending the element, **2 3 5 8 B G Q R X** are limited to a minimum height of 3½ inches.

FRANKLIN BRAND-EM-OL

Franklin Brand-Em-Ol is a powerful scientific chemical compound that eats or burns a brand into the surface of the hide without heat, producing a dry scab that in a few weeks peels off, leaving a clean-cut, lasting brand. Brand-Em-Ol, when applied properly in accordance with directions, penetrates the hide evenly over the area of the brand, minimizing the danger of deeply burned sore spots. Accordingly, the danger of screwworm infestation is reduced.

The imprint of the brand is plainly visible from the time Brand-Em-Ol is first applied—showing up on the hair at first much as a plain brand does on the wool of sheep.

Price: 8-oz. (average 50 head) **\$1.40**;
16-oz. (average 100 head) **\$2.25**; 32-oz. (average 200 head), **\$3.50**. Postage extra.

RED BRONZE BRANDING IRONS WITH CONCAVE FACE

For Applying Brand-Em-Ol



3-Inch Standard Letters or Figures,
⅜-Inch Face.....each **\$1.60**

4-Inch Standard Letters or Figures,
½-Inch Face.....each **2.00**

Standard characters such as Half Circles, Circles, Quarter Circles, Crosses, Bars, etc., in either 3 or 4-inch sizes at prices quoted above. All prices postage extra.

Sets of 3-Inch Figures—9 in Set.....**\$13.00**

Sets of 4-Inch Figures—9 in Set.....**\$15.60**

Made-to-Order Irons

Special irons at from \$11.75 up, according to number of characters and size. Built on one handle. Orders for special irons must be accompanied by exact drawing of iron desired. All prices postage extra.

1 character on 1 handle, 3-inch.....**\$11.75**

2 characters on 1 handle, 3-inch.....**\$16.00**

3 characters on 1 handle, 3-inch.....**\$17.75**

1 character on 1 handle, 4-inch.....**\$13.00**

2 characters on 1 handle, 4-inch.....**\$17.75**

3 characters on 1 handle, 4-inch.....**\$19.50**

IDENTIFY CATTLE, SHEEP AND HOGS WITH KETCHUM EAR TAGS

Kurl-Lock

- ★ The Kurl Lock Tag is a most dependable tag.
- ★ It cannot be removed without detection.
- ★ It pierces the toughest ear.
- ★ It is attached & sealed with one operation.
- ★ It is made from long wearing cadmium coated rust resistant steel.

The tag is placed with the slot over the groove in the plier, then pulled back with the index finger until it clicks into place. It will then hold in the plier, as illustration, ready to place over ear. The tag should be placed fairly close to the head. Do not crowd the ear by placing the tag too far back, nor let the tag dangle from the ear.



KURL-LOCK SPECIAL PLIERS

Whitened Steel Pliers of new design. Made in two sizes, No. 2 and No. 3. The same pliers will not do for both size tags. Price.

K-3-KN—To seal No. 3 Tags.....\$3.25

K-2-KN—To seal No. 2 Tags.....\$3.25

Sh. Wt. 1 lb.

STAMPING ON TAGS

No. 3 Tags can be stamped with up to seven 3/16" letters in one line only and any consecutive numbers.

No. 2 Tags can be stamped as follows: one line up to ten 1/8" letters; one line up to five 3/4" letters; or two lines up to eight 1/8" letters in each line and any consecutive numbers.

□ □ A B D R O G N

□ □ A B C D E

□ □ CARLETON
DAVIDSON

Please note we cannot stamp more letters than specified above as the tag will not seal properly if the stamping goes around the bend. If you request more than the amount of stamping specified above, we reserve the right to abbreviate without advising you.

Tags are numbered unless you specify otherwise. Tags are natural aluminum color. No. 2 tags are also available in yellow, green and blue colors at slightly extra cost. Prices as follows, postage extra.

NOTE: All ear tag prices shown are subject to Federal Sales Tax of 11%. Please add this amount to the prices shown.

No. 3 SIZE: 1 1/4" x 1/4" — SUGG. FOR SHEEP AND SWINE

No. 2 SIZE: 1-3/8" x 5/16" — SUGGESTED FOR CATTLE

Cadmium Plated Steel						Steel					
Cadmium Plated Steel			Aluminum			Cadmium Plated Steel			Aluminum		
Quantity	Numbers only	Numbers and Stamping	Quantity	Numbers only	Numbers and Stamping	Quantity	Numbers only	Numbers and Stamping	Quantity	Numbers only	Numbers and Stamping
25	\$3.00	\$4.00	25	\$3.00	\$4.00	25	\$3.00	\$4.00	25	\$3.00	\$4.00
50	3.45	4.45	50	3.45	4.45	50	3.45	4.45	50	3.45	4.45
100	4.40	5.40	100	4.40	5.40	100	4.40	5.40	100	4.40	5.40
500	15.40	16.40	500	15.40	16.40	500	15.40	16.40	500	15.40	16.40
1000	26.00	27.00	1000	26.00	27.00	1000	26.00	27.00	1000	26.00	27.00



VISA EAR TAGS — This tag has a 1/2" number, and can be numbered up to 9999. Additional stamping is also possible; up to four small letters or numbers may be stamped on the face of the tag under the large number; and one or two lines of seven letters, or numbers, may be stamped on the back shank of the tag. These stamping limits can not be exceeded.

Tags are available in natural aluminum or red, green, yellow or blue colors. The number is blackened on these tags. Prices as follows, postage extra.

VISA EAR TAG PLIERS, Each, \$3.50 Postg. Ex.

Quantity	Plain		Coloured		Shipping Weight
	Numbers Only	Number and Stamping	Numbers Only	Numbers and Stamping	
(Minimum) 25	\$ 4.50	\$ 5.50	\$ 5.85	\$ 6.85	10 ozs.
50	6.25	7.25	8.15	9.15	1 lb.
100	11.25	12.25	14.65	15.65	2 lbs.
500	45.55	46.55	59.20	60.20	10 lbs.
1000	87.85	88.85	114.20	115.20	19 lbs.

KETCHUM'S TATTOO MODEL 400 for HOGS

A special large size tattoo set. The pliers will hold 1 to 4 letters or figures, which are made from steel needles, 1/2" high. This set is used when special marks are required.

Price, including five letters, ten numbers (0-9), bottle of black ink and nickle plated pliers \$16.00.

Shipping Wt. 3 lbs., postage extra.

Also special sizes for Chinchillas, Rabbits and Dogs.

KETCHUM TATTOO INK

Green ink or paste is highly recommended for hogs, sheep and cattle. It is a matter of choice whether liquid or paste is used, but paste being more concentrated is best for dark eared animals.

One 2 oz. bottle of ink should make 80 markings.

One large tube 50 markings.

Qty.	Green Fluid	Green Paste
2 oz.	\$1.25	Small tube \$1.00
1/2 Pt.	3.00	Large tube \$1.50

FRANKLIN TATTOO INK

An indelible black ink of heavy, creamy consistency. Extensively used by leading breeders in all parts of the country. Produces a legible tattoo mark in dark-eared cattle—hardest test of a tattoo ink. A lighted flashlight held behind the ear will make reading of the tattoo mark in dark-eared animals much easier.



Prices: 2-ounce jar, **75c**; 6-ounce jar, **\$1.50**. Postage extra. Write for prices on larger quantities.

SHEEP BELLS



No. 631—Genuine 'Long Distance'

Made from one piece of metal no riveting. Smooth, clear tone.

Size No.	Per Dozen	Size-Bell Inches	Weight Pounds per Doz.
8	\$7.00	2 1/8 x 1 1/2 x 1 5/8	2 1/2
9	\$8.20	2 5/8 x 2 x 2	3 1/4
10	\$10.80	3 x 2 1/4	5
11	\$13.20	3 1/2 x 2 5/8 x 3 5/8	7
014	\$21.20	5 x 3 3/4 x 4 1/2	15 1/4

Postage extra

Leather Straps

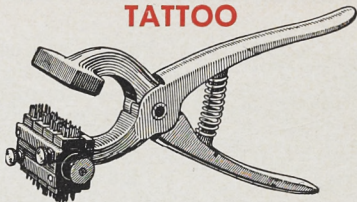
For bells listed above. Size, 7/8x26 inches. **Price: 90c**. Postage extra.

LAMB NIPPLES



Made of black gum rubber, sufficiently rigid to instantly recover after being collapsed by suckling action. Fits neck of ordinary bottle. **Prices: 20c** each or **\$2.00** per dozen. Postage extra.

FRANKLIN REVOLVING HEAD TATTOO



Revolving head permits installation of letters or characters on one side for permanent use, while the numerals, which are to be changed after each use, are installed on the opposite side. By pulling pin at side of head, it may be revolved and locks in place automatically. Each side of head holds up to four characters. Tongs are of malleable iron. Outfit Complete with Tongs (Pliers), Set of Figures (0 to 9) Either 1/4-Inch or 3/8-Inch Size; 2-Ounce Bottle Tattoo Ink..... **\$11.25**
Tongs (Pliers) Only..... **\$8.00**
Letters or Figures..... each **.50**
Set of Figures—0 to 9..... **3.50**
Complete Alphabet—A to Z..... **9.00**

Special Characters—prices on request.
Postage extra.

INTERCHANGEABLE TATTOO OUTFIT



Designed for use on both cattle and small animals and poultry. Supplied with 3/8-inch digits for cattle or 1/4-inch digits for small animals and poultry.

The tongs are of malleable iron and hold up to four characters of either 1/4-inch or 3/8-inch size, or only one may be used if preferred. These digits are inserted individually from front of tongs and no blank digits are required.

Outfit Complete with Tongs (Pliers), Set of Figures (0 to 9) Either 1/4-Inch or 3/8-Inch Size; 2-Ounce Bottle Tattoo Ink..... **\$9.00**
Tongs (Pliers) Only..... **6.25**
Letters or Figures..... each **.50**
Set of Figures—0 to 9..... **3.50**
Complete Alphabet—A to Z..... **9.00**

Special Characters—prices on request.
Postage extra.

PROPERT'S LEATHER SOAP



Famous through 6 reigns, the choice of the discriminating during the reigns of Queen Victoria, King Edward VII, George V, Edward VIII, George VI and Elizabeth II. Used by the

British and American armies.

The genuine, unexcelled, imported article.

Price: Large size, **85c**; small size, **50c**.

'Belvoir' Glycerine Saddle Soap



An excellent product for those preferring a solid bar soap, for economical use. Famous for years in England as a very satisfactory leather

cleanser and as preservative—now available in Canada. 10-oz. bars, each, **80c**

HAND TALLY REGISTER

For accurately counting cattle, sheep, or other animals, or in any event where continuous counting is required.

Attractively and durably constructed of chrome-plated metal.

Prices: Size #0, 3-dial **\$7.00**
Size #1, 4-dial **\$7.50**

RUMEN INJECTOR NEEDLES

Available in two styles: In 3¼" length to fit plastic cap of Rumen Injector Bottle or bottle containing Frothy Bloat Treatment; or in 4" length with threaded hub to screw into standard metal dose syringe.

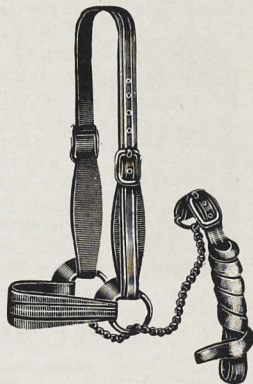
Either style **\$1.10**, postage extra.

FRANKLIN SHOW HALTER

NO. 3

This halter is attractive and very popular with 4-H Club boys, and inexpensive. Plated brass hardware; reinforced wide nose and cheek bands; lightweight; complete with chain and lead.

Calf size, **\$8.40**.



NO. 7

The most popular halter of a popular line. Made of finest quality tan skirt leather, artistically designed. Flat solid brass buckles and rings

(nickel-plated on white halter). The nose band of this halter has scalloped edges with stitched over-lay. The flat cheek strap is scalloped to match the nose band. Very showy and especially popular with Hereford breeders. The leather lead is of best quality, insuring extra strength.



Made in four sizes (shipping weight 4 pounds). Calf size,

\$12.00; yearling size, **\$12.60**; aged cow and 2-year-old bull size, **\$13.00**; large bull size, **\$14.00**.

Above halters include 18-inch brass lead chain with snap and swivel.

The No. 7 style is also available in white leather with nickel hardware and 20-inch nickel plated lead chain with snap and swivel. Yearling size, which is adjustable, **\$14.50**. Postage extra.

HALTER CHAIN

Nickel finish, 20 inches long, with swivel and snap. **Price: \$1.50** each. Postage extra.



FRANKLIN SHAMPOO CONCENTRATE

*A Coconut Oil Shampoo
for Animals*

**Contains No Detergents
To Dry the Hair**

Effective with either warm or cold water. Wet the hair first, then apply small amounts of Franklin Shampoo and scrub with a stiff brush such as the Franklin Rice Root Brush. May be diluted as desired by the addition of pure water. The use of Franklin Shampoo Concentrate leaves the hair with a soft lustre. Ideal in fitting animals for the show ring.

Price: 1 pint, **\$1.35**; 1 quart, **\$2.40**; 1 gallon, **\$6.80**. Postage extra.

FRANKLIN BLUE RIBBON COAT DRESSING



Prepared from our own formula. Superior for dressing the hair of animals for show. It is not sticky and does not injure the hair.

Economical to use.

For a natural bloom that catches and holds the eyes of the judges.

Price: Pint, **\$1.00**; quart, **\$1.65**; gallon, **\$4.70**; Postage extra.

FRANKLIN AEROSOL HAIR GLOSS

A pressurized oil dressing, containing Lanolin for use on show animals to enhance the natural gloss and luster of the hair.

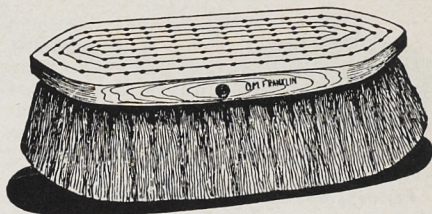
15-oz. Spray Bomb, each, **\$2.25**. Postage extra.

WASH APRONS

Rubber wash aprons that really protect. Built to stand up under hard wear, just the apron for show circuit use.

Price: No. 103 Maroon, Extra Heavy, **\$6.25**; No. 103C Black Rubber, **\$4.75**. Postage extra.

RICE ROOT GROOMING BRUSH



Handmade throughout of selected rice root bristles sewed with wire into molded plastic back, conveniently shaped to fit the hand, resistant to breakage and impervious to moisture. Bristles are properly flared for springy action.

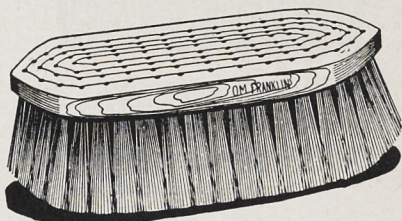
To lengthen life of brush, soak overnight in water. To set the bristles, use wet brush on animal until bristles are dry. After using brush to wash cattle, set on bristles to dry.

Pocket Size, 1½" x 5½".....each **\$1.30**

Small Size, 2¼" x 6¼".....each **\$3.20**

Medium Size, 2½" x 8¼".....each **\$3.55**

FRANKLIN SOFT FIBER GROOMING BRUSH



A classy companion for our famed Rice Root Brush. Especially adapted for short hair dairy breeds and horses. Made of soft white fiber, drawn with wire in same durable plastic back described above. Every brush of guaranteed quality and workmanship.

Small Size, 2¼" x 6¼".....each **\$3.20**

Medium Size, 2½" x 8¼".....each **\$3.55**

Postage extra.

Show Sticks: See page 74 for description and prices.

FLEXIBLE RUBBER CURRY COMB



Removes dirt and loose hair painlessly and efficiently. Eliminates danger of infection and irritation resulting from sharp, rusted steel curry comb. Cleans tender parts of the legs without irritation.

Price: \$1.00 each. Postage extra.

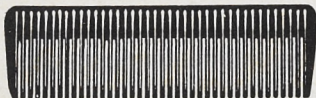
CIRCULAR REVERSIBLE CURRY COMB



Of spring steel, having sharp teeth on one side and rounded teeth on the other. The all-round grooming necessity.

Price: \$1.40 Postage extra.

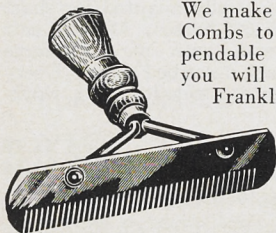
DRESSING COMBS



Our special black hard rubber comb, all coarse, smooth, shapely teeth. A popular style made by the largest comb manufacturer in the United States.

Price: \$2.00. Postage extra.

FRANKLIN'S SCOTCH COMBS

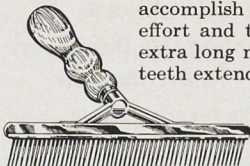


We make our own Scotch Combs to insure that dependable quality which you will always find in

Franklin merchandise. Indispensable for preparing animals for show ring competition. **Price** \$2.00. Postage extra.

CHAMPION ROUND TOOTH COMB

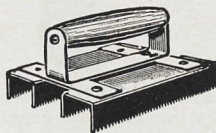
Franklin offers a comb of superior quality in its new **Champion** round tooth comb. The polished blade is 9 inches long, to accomplish more with less effort and time. The special, extra long nickel-plated round teeth extend to the ends of the blade so that each stroke results in a uniform finished appearance of the hair — no unsightly ridge to comb out or attempt to obscure. The round teeth will not cut the hair, and pulling is reduced.



Order your Franklin **Champion** round tooth comb from your Franklin dealer or nearest Franklin sales office.

Price: Each, \$6.50, postage extra.

MARKING AND LINING COMB



For lining or waving preparatory to curling for the show ring. Substantially made of best quality steel.

Price: \$1.40. Postage extra.

D - C ROUND TOOTH COMB

A comb of improved design which features a 6-inch die-cast blade, and die-cast handle fork with hand-fitting hardwood handle. Stronger, yet lighter in weight, and with better balance. Round teeth reduce the pulling of hair. Made with coarse-set teeth for long winter coats or



with fine set teeth for short coats. Specify preference when ordering. Teeth are firmly set in the blade to resist loosening.

Price: Each, \$1.65, postage extra.

HOOF PARER

Drop forged, from special analysis steel for rugged service. Cutting edges hand-filed.

Price: 14-inch, \$5.00, postage extra.

HOOF NIPPER

Drop forged, of the same special steel used in the Hoof Parer described above. Cutting edges hand-filed.

Prices: 10-inch, \$4.60; 14-inch, \$5.00. Postage extra.

HOOF KNIVES

Hoof knives of finest quality for paring and cleaning. Length, 8 inches, with $\frac{3}{4}$ -inch blade.

Imported, a fine knife with hardwood handles and plated blade. Available for right- or left-handed users, \$2.50.

Postage extra.

HANDY HOOF TRIMMERS

An ideal tool for every farmer. So simple that a boy can do the work. Use this tool for trimming hoofs on horses, cows and bulls. Using this trimmer prevents accidents, saves time and money. The 30-inch handles give leverage. Made of high carbon tool steel.

Price: \$13.65. Postage extra.

FRANKLIN HORN BRANDING IRONS

Copper alloy. Long wearing. Vented to lessen scorching inside the numbers. Improved shaped figures with concave face. Black iron handles. Two sizes — $\frac{1}{2}$ -inch and $\frac{3}{8}$ -inch, each in set of nine numbers.

Prices: 5/8-inch numerals, each \$1.60; set of nine figures (6 and 9 interchangeable), \$12.50. 7/8-inch numerals, each \$1.70; set of nine figures, \$13.50.

Letters can also be supplied as follows: 5/8-inch, each \$1.60; 7/8-inch, each \$1.70. Above prices postage extra.

NOTE: For complete information and prices on newly designed and improved Franklin Copper Branding Irons, see pages 66 and 67.

HORN RASPS

Half round with beveled end.

A rasp and file combined to smooth and shape the horn or hoof. Length, 10 inches.

Price: \$1.75. Postage extra.

HOOF RASPS

The **Plater's Special** rasp illustrated above is available in 14-inch length with tang, XX-thin pattern. An excellent rasp for use on riding horses. Also available but not illustrated, the 18-inch **plain**, double-ended **slim** pattern for larger horses.

Prices: 14-inch Plater's Special, \$4.25; 18-inch Plain, \$5.00, Postage extra.

POSTAGE: Please note, prices on vaccines, mastitis ointments and penicillin products are **postage paid**. All other items are priced **F.O.B. Calgary**. Your local dealer's prices will, therefore, be a little higher than catalogue prices, to allow for postage. If there is no Franklin dealer in your district, be sure to include extra for postage when ordering direct. Any surplus will be returned.

FRANKLIN SHOW STICKS



Franklin manufactures two show sticks, each designed to combine dressy appearance and comfortable balance with durability, to aid in showing animals to best advantage.

Franklin's **Champion** Show Stick (see illustration above) has chrome-plated step-down steel shaft with molded rubber grip, and is 50 inches long. **Price, \$7.00**, postage extra.

Franklin's **Telescopic** Show Stick available in bright anodized natural aluminum, telescopes to minimum 31 inches to fit average show equipment box, and extends to 50 inches.

Price: \$5.75. Postage extra.

HICKORY SHOW STICK

Square, tapered second growth hickory. Length, 4½ feet. **Price, \$1.20** Postage extra.

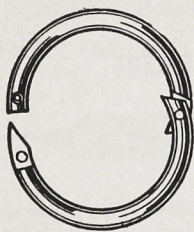
HICKORY CANE

Heavy, second growth hickory. Round shape sturdy for long hard use.

Price: \$1.65, postage extra.

BULL RINGS

All made of finest quality cold drawn copper in sizes and types for all requirements.



Self-Piercing Type

Ordinary Weight

Size	Each
Inches	
2¾ x 5/16	\$1.00
Postage extra.	

Extra Heavy

3 x ¾	\$1.15
Postage extra.	

CAPONIZING OUTFITS

Capons bring increased prices. Caponize your young cockerels with this improved caponizing outfit. Easy to do your own work at a very minimum cost. Our outfit includes sheet of instructions and all instruments necessary for use.

Price: \$6.00. Postage extra.

LARIAT ROPES



All our ropes are 100% guaranteed. They are waterproof and frostproof, and will take all weather. Standard ropes are equipped with Aluminum hondas, which is five times lighter than steel, thereby reducing the possibility of injuring an animal's eyes when roping. Ropes can be equipped with Leather Burner or Quick Release Honda on request. Add \$2.00 to prices for Quick Release Honda.

Ropes come in standard lengths of 33 feet except Nylon which is 30 feet.

Ropes of special lengths and sizes can be supplied on request.

Type	Size	Price
Rainbow Manilla	7/16"	\$4.95
Yacht Line	7/16"	4.95
White Magilla	7/16"	4.95
Black Jack	7/16"	\$4.95
Pure Nylon (Leaded)	7/16"	14.95



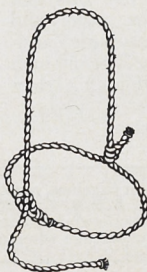
"QUICK RELEASE" HONDA

With this honda it is easy to release struggling animal without releasing rope from snub post or saddle horn. **Price: Each \$2.20.** Postage extra.

ADJUSTABLE ROPE HALTER

For shipping, trucking, sale, and general use. Can be adjusted to fit any size animal. Provides strength with long wearing qualities at low cost.

Prices: Cotton, \$2.25; Manilla, \$1.95; Sisal, \$1.50; Postage extra.



CASTRATION, DOCKING AND DEHORNING BY THE "RUBBER RING" METHOD

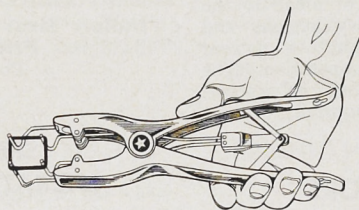
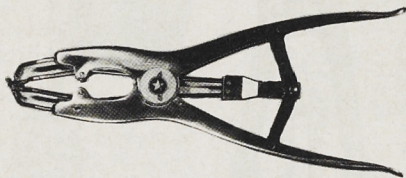
A thorough field-tested and proven method of bloodless castration, tail-docking, and dehorning, accomplished by applying a specially compounded rubber ring to the scrotum, tail, or base of horn by means of an instrument which expands ring to proper size for application. Constricting action of ring stops circulation of blood to the part and causes it to atrophy and drop off. Rapid; bloodless; no cutting or crushing. Operation can be performed in fair or inclement weather. Particularly suited for castrating and docking of lambs, but also may be used successfully for castrating and dehorning calves and for dehorning goats. **CAUTION:** Before castrating or dehorning by the "rubber ring" method, investigate all limitations. Remember, this method is for use on smaller animals while application to animals too large for the practice may cause only partial stoppage of circulation, thus leading to infection and possible death loss.

FRANKLIN CASTA-RINGER

The Franklin Casta-Ringer is an improved instrument for applying special rubber rings to the scrotum, tails, and horns of lambs, calves, and goats.

This instrument provides excellent leverage to facilitate stretching the ring to proper circumference for application to the part to be removed. After ring is placed in position over prongs, it is expanded by smoothly exerting pressure on the handles. Ring is then placed in proper position over the part to be removed, pressure is released, and the prongs are disengaged from the ring while holding the ring in desired position with free hand.

The Franklin Casta-Ringer has been improved over other instruments now on the market by forming the expansion prongs of heavier gauge material to better withstand the normal pressure to which the instrument is subjected.



Bearing surfaces in the hinge area are greater, for additional strength and positive action; handles are longer for increased leverage. There is a keyhole in the end of each handle for hanging the instrument on a belt hook, or to facilitate storage. Ribs in the handles provide greater strength for increased serviceability. The four expansion prongs over which the ring is placed while the instrument is in closed position, are set securely in the frame tips and lever bars to reduce the possibility of breakage while under stress.

The Franklin Casta-Ringer is an instrument of superior quality, fully guaranteed against faulty materials and workmanship. It is simple in design while offering ease of operation and efficiency in

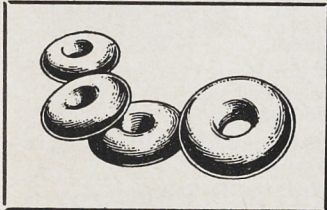
performing the application for which it is intended.

Price: \$12.50, postage extra. See your Franklin dealer for other information.

GENUINE "ELASTRATOR" RINGS

The genuine "Elastrator" ring is the toughest, most durable ring on the market; made from a specially compounded rubber in a completely new donut-shaped design which eliminates any possible areas of stress or strain. Ask for the GREEN ring.

Prices: 50 rings, \$1.10; 100, \$2.00; 250, \$4.40; 500, \$7.70; 1,000 to 1,500, \$13.20/M; 1,500 or more, \$12.10/M. Postage paid.



THE BURDIZZO CASTRATOR

Genuine Imported Castrating Instrument

For bloodless and more humane method of castrating livestock by severing the testicular cord without injury to the bag (scrotum).

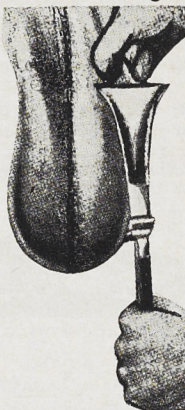
By this method the testicles wither away and disappear thru absorption by the animal's system. Set-backs, loss from blood poisoning and infestation of screw worms are eliminated.

Crush one cord at a time. Each cord should be pressed well into the side of the scrotum so that as little as possible of the scrotum is compressed by the instrument.

Apply instrument as shown in figure; close jaws completely for a few seconds—release the instrument and perform the same operation on the other cord. Immediately after the blood vessels of the cord are crushed, the flow of blood to the testicles is stopped and they atrophy and disappear. Complete atrophy is noticed about six weeks after the operation. The animal does not suffer and no special attention or treatment is required.



For Docking Lambs' Tails. Use either small or large size instrument. This instrument is used extensively for docking. Cut off tail inside the closed jaws. The crush of the pincers will reduce bleeding.



A high quality instrument (not a tool) made of high quality steel precision fitted, nickel plated, with cord stop. Easy to use. This type of clamp instrument has been used successfully for many years.

Baby Size: 9 inches long; weight, 24-ozs. For lambs. **Price: \$19.00.**

Small Size: 12 inches long; weight, 3 lbs. 4 ozs. For lambs or young calves or for docking lambs. **Price: \$22.00.**

Large Size: 16 inches long; weight, 4 lbs. 8 ozs. For calves or bulls. **Price: \$25.00.**

Indian Size: 19 inches long; weight, 5 lbs. 8 ozs. **Price: \$25.00.**

Postage extra.

EMASCULATORS



These instruments are of superior quality, chrome-plated for added durability; easily cleaned and disinfected.

For castrating of all animals, and for docking of lambs. Crushes the cord before it cuts, resulting in reduced bleeding.

Sklar Type: Regular size, **\$18.00.** Canine size, **\$13.00.** Postage extra.

White's Type.—With double crushing attachment. Regular size. **Price: \$22.00** Postage extra.

SPECIAL FREE LITERATURE AVAILABLE

It is not practicable, in a catalog of this size, to include full descriptions and illustrations of all ranch equipment, etc., we sell.

Please write for special folder of any of the items listed below:

Chutes—Stocks, Calf Tables. Teco

Grain Busters — Allen.

Stewart Clippers.

Applicators (for Horn Flies, etc.).

Growth Booster Pellets.

Electric **Dehorers.**

Branding Irons — Electric, Hot (Copper), Brand Em Ol (Acid).

Vitamin A Injectable Solution.

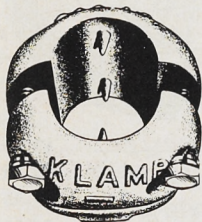
Clostridium Perfringens Type C Toxoid.

FRANKLIN HORN SHAPING WEIGHTS

Franklin offers three styles of horn shaping weights in their extensive line of quality products for breeders and exhibitors of show cattle. Each style has been designed to meet a specific functional as well as economic requirement. Regardless of his choice, the user may rely on these weights to accomplish the desired results.

KLAMP HORN WEIGHTS

This is an extremely popular weight with breeders throughout the country.



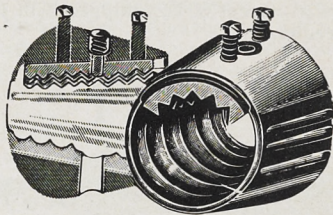
Referring to the illustration at left, it is noted this is a two-piece weight which is assembled and secured by means of a bolt and a lock washer. Two prongs in each half of the weight are brought in contact with the outer

surface of the horn directly opposite each other. Pressure can be controlled and set just snug enough to secure the weight in place. Bolt may be tightened with crescent or socket wrench.

Prices: ½-pound, **\$2.25** per pair; ¾-pound, **\$2.40** per pair; 1-pound, **\$2.50** per pair. **Wrench** for applying Klamp Horn Weights, **60c.** Postage extra. Discount on 25 or more pairs, 5%.

WEDGE HORN WEIGHTS

The Franklin wedge-type horn weight has been used extensively for many years by

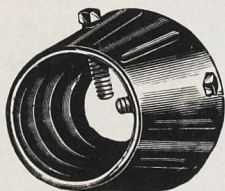


prominent breeders throughout the industry. The floating wedge feature of this weight permits ready adjustment to the taper of almost any horn, with a minimum of shaping required prior to application. The concave face of the wedge opposite the grooved inner surface of the weight will hold weight in place with minimum injury to the horn.

Prices, per pair: ½-pound, **\$2.40**; 1-pound, **\$3.00**; 1½-pound, **\$3.70**; 2-pound, **\$4.00.** Postage extra. Discount on 25 or more pairs, 5%.

SET SCREW HORN WEIGHTS

This is an economical weight to use where the set screw type weight is suitable. This



weight has an added advantage over ordinary set screw type weights because of the grooved gripping surface in the body of the weight directly opposite the set screws.

Franklin Set Screw Horn Weights are available in four sizes:

Prices: ½-pound, **\$1.40** per pair; 1-pound, **\$2.10** per pair; 1½-pound, **\$2.60** per pair; 2-pound, **\$3.20** per pair. Postage extra. Discount on 25 or more pairs, 5%.

FRANKLIN HORN TRAINER

With Springs



Made for the purpose of pulling horns forward or making other corrections after horns have been pulled down and are too far back.

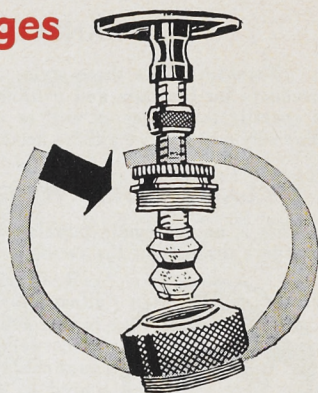
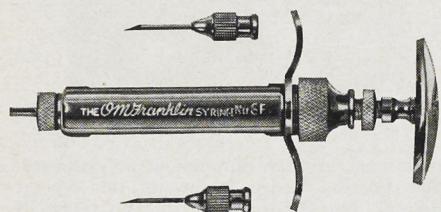
Cones are made of aluminum, weight 2 ounces each, to eliminate weight in order to pull horns forward only. Adjustable leverage so that one horn may be corrected more than the other if necessary, or pulled up or down as well as forward.

Price: **\$4.95.** Postage extra.

Franklin Syringes

Franklin syringes are constructed of the finest materials, for precision and accuracy in administering biological products and antibiotics by hypodermic injection. Metal parts are of brass, heavily plated. Barrels are of resistance glass, heavy duty, to withstand breakage. All sizes, except the 6-cc and 60-cc, are constructed with **2-piece head cap** as illustrated at right, to facilitate cleaning without complete disassembly.

All sizes except 60-cc equipped with two stainless needles.



Prices:

6-cc	\$3.00
10-cc	\$3.35
20-cc	\$3.95
25-cc	\$4.15
40-cc	\$4.30
60-cc	\$5.00

Postage extra.

PARTS FOR FRANKLIN SYRINGES

Syringe No.	6-F	10-F	20-F	25-F	40-F	60-F
Washers.....per set	\$0.15	\$0.15	\$0.15	\$0.15	\$0.15	\$0.40
Resistance Glass Barrels.....each	.40	.65	.90	.95	1.10	1.10
Packings (Plunger Rubbers).....each	.15	.35	.35	.35	.35	.80
Slip Adaptors.....each	.30	.30	.30	.30	.30	.30
Luer-Lok Adaptors.....each	.40	.40	.40	.40	.40	.40

Nos. 10-F, 20-F, and 40-F Syringes have extra heavy resistance glass barrels.
Postage extra.

FRANKLIN HYPODERMIC NEEDLES

14-gauge, $\frac{3}{4}$ " and 1".....doz.	\$3.50	18-gauge, $\frac{3}{4}$ ", and 1".....doz.	\$2.80
$1\frac{3}{4}$ ".....doz.	\$4.30	$1\frac{1}{2}$ ".....doz.	\$3.10
3".....doz.	\$6.00	19-gauge, $\frac{3}{4}$ " and 1".....doz.	\$2.80
16-gauge, $\frac{3}{4}$ " and 1".....doz.	\$3.00	20-gauge, $\frac{1}{2}$ ", $\frac{3}{4}$ ", and 1".....doz.	\$2.80
$1\frac{1}{2}$ ".....doz.	\$3.30		

DISPOSABLE SYRINGE

An inexpensive plastic syringe which may be discarded after use. Capacity, 12 cc's in 1-cc graduations. Packaged without needles in sterile plastic tube.

Price: Each, 29c. Postage extra.

SYRINGE FILLER

Continuous Flow Outfit

This set consists of two-way valve with three feet of rubber tubing and filling tube, for automatic syringe filling.

Price: Per set, \$5.50. Postage extra.

IMPERIAL VIKING SYRINGE



A premium-quality syringe with precision barrel and molded ceramic

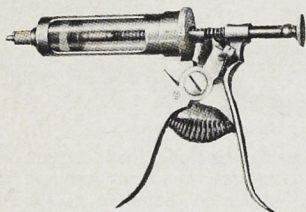
plunger having the same coefficient of expansion to provide highest degree of accuracy and uniform performance in extreme variations of temperature. Replacement barrels and plungers are interchangeable. Outer construction of heavily chrome plated brass. Each equipped with Viking Lock Adaptor and two 16 x 1" stainless hypodermic needles.

Prices: 10-cc, \$4.55; 25-cc, \$5.60. Postage extra.

AUTOMATIC "ROUX" SYRINGE

Revolver Type

With settings from 1-cc to 5-cc.



50-cc Size..... Each **\$19.50**
30-cc Size..... Each **\$18.00**

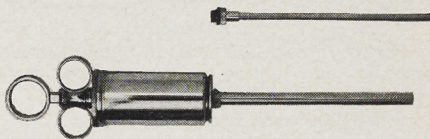
NICOTINE 40%

A nicotine sulphate solution containing 40% nicotine, recognized by the U.S. Bureau of Animal Industry in official dippings. Nicotine 40% may be used for official dipping or spraying of livestock, under official supervision for control of scabies, sheep ticks and lice. It is effective in the control of lice and mites on poultry and in poultry houses. Also effective for use in spraying plants, orchards, or gardens for most aphids, thrips, and leaf hoppers.



Prices: 50 lbs., \$93.00; 10-lb. tin, \$19.50; 5 lbs. \$11.00; 1-lb. bottle, \$3.15; 4-oz. bottle, \$1.29; 1-oz. bottle, 55c. Postage Extra.

METAL DOSE SYRINGES



Franklin metal dose syringes are of the finest quality available. Constructed of heavy brass and heavily plated to withstand the hardest use. Plunger rod is plainly marked to facilitate gauging each dose.

Dose syringes are in wide use for oral administration of medicines to animals; for irrigating of wounds; and more recently, for **injection** of medication directly **into the rumen** of ruminants.

2-oz. short style with two pipes.....**\$2.85**
4-oz. short style with two pipes.....**\$3.45**
6-oz. with one 6-inch pipe.....**\$6.50**
8-oz. with one 6-inch pipe.....**\$5.50**
12-oz. with one 9-inch pipe.....**\$9.00**

Postage extra.

McPHERSON'S MOUTH SPECULUM



Allows for a large opening, without any obstructions, for examination and dental work, and is fitted with two sets of dental

plates. One set, which fits behind the incisor teeth, is used when working on the incisors. The semi-lunar cup-shaped plates fit on the incisor teeth and are used when working on the molars. Made of brightly polished alloy, fully guaranteed, fitted with leather straps. **\$23.00** each, postage extra.

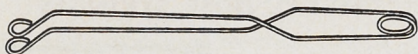
MOUTH FLOAT



Set consists of handle, one blade, and two detachable heads—one straight, one curved. Blade is fine toothed on one side, coarse on the other.

Price: Mouth Float complete with two heads, file and rasp blade, **\$6.00** each. Universal file and rasp blade, **\$1.40** each. Postage extra.

WIRE CAPSULE FORCEPS



Nickel finish, for use in administering capsules and tablets to swine, sheep, goats and other small animals.

Price: 50c each. Postage extra.

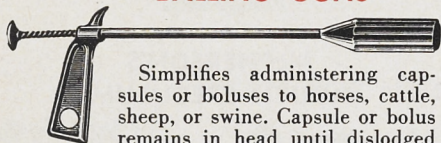
BRITISH CAPSULE FORCEPS



Heavy steel construction, for use in administering capsules and tablets to swine, sheep, goats, and other small animals.

Price: \$1.15 each. Postage extra.

BALLING GUNS



Simplifies administering capsules or boluses to horses, cattle, sheep, or swine. Capsule or bolus remains in head until dislodged with plunger.

Model 240 with pistol grip as illustrated above (for 240-gr. boluses or capsules of equivalent size) **\$4.20**

Model 60 with pistol grip (for 60-gr. boluses or capsules of equivalent size) **\$4.00**

Model 240 with extra long plunger for use in inserting uterine capsules or boluses **\$4.50**

Equine size with 3-ring grip **\$4.00**

Sheep or Swine size with 3-ring grip:

Medium size head (2½ cc) **\$2.20**

Large size head (5 cc) **\$2.60**

Triple Head, accommodates five sizes of capsules or tablets. **\$3.60**

All prices postage extra.

Multiple Bolus Balling Gun: A new item to facilitate administration of 240-grain or 12½-gram boluses to large animals which require more than one bolus in a normal dose of the medication in use. Barrel of the gun holds six 240-grain or five 12½-gram boluses which may be ejected one at a time.

Price: Each, **\$5.70**. Postage extra.

BALLING IRONS

Equine

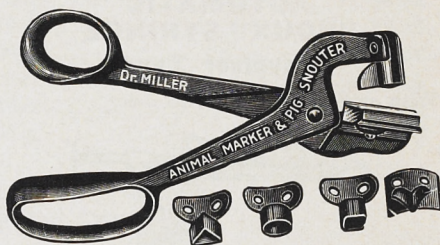
With Handle and Loop for Head
Rope each **\$3.50**
Postage extra.

For Hogs and Sheep

Jaw Spreader for Use in Giving Capsules.....each **\$1.15**..
Postage extra.



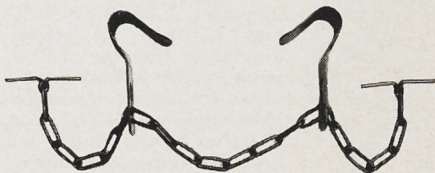
DR. MILLER ANIMAL MARKER & PIG SNOUT CUTTER



Ear marker and pig snout cutter. Marking blades come in round, square and triangle shapes, ½-inch in diameter, as shown. Also available but not shown, pig size V marking blade and heart shaped blade.

Price: Marker with pig snout blade, **\$5.60**. Extra marking blades, **\$1.30** each. Postage extra.

COW HOBBLER



With two flat metal hooks fitting over the tendons or cords of cow's legs. Chain is drawn through slot until brought into holding position. Stops kicking, side-stepping, etc., and is equally useful whether cows are milked by hand or machine. Each **\$1.20**. Postage extra.

VETERINARY INJECTION PUMP OUTFIT

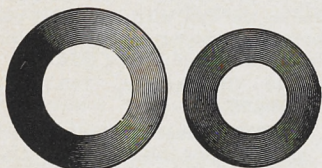


This is a continuous flow pump as it pumps on both the up and down stroke. It can also be used with a stomach tube for drawing fluid out of the stomach by attaching stomach tube to the bottom nipple. It is made of heavy brass seamless tubing, nickel-plated, with one-piece head and tapered end connection that fits all size stomach tubes.

Price: Pump only, **\$9.25**. Postage extra.

STOMACH TUBES

Flexible



Actual Size of Tube Thickness

May be used in connection with injection and suction pump.

Large

Outside diameter, $\frac{7}{8}$ -inch; inside diameter, $\frac{1}{2}$ -inch; thickness of wall, $\frac{1}{16}$ -inch; 10-foot length, **\$6.50**; 5-foot length, **\$3.50**. Postage extra.

Small

Outside diameter, $\frac{3}{4}$ -inch; inside diameter, $\frac{3}{8}$ -inch; thickness of wall, $\frac{1}{16}$ -inch; 10-foot length, **\$5.75**; 5-foot length, **\$3.00**. Postage extra.

SHEEP SHEARS



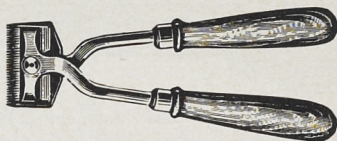
SHEEP SHEARS — From England. The Famous T.U.S. Hand Sheep Shear or the B.B.A. Shear — Double Bow Pattern.

6 $\frac{1}{2}$ " Blade—Straight Shear, Pair.....**\$4.00**

7" Blade—Straight Shear, Pair.....**\$4.25**

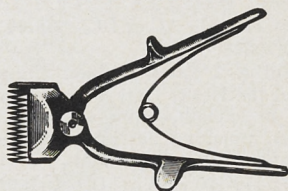
HAND CLIPPER

For Cattle and Horses



An imported clipper of finest quality. The type preferred by State brand inspectors. Blades of high carbon steel. Length, 11 $\frac{1}{2}$ inches. Weight 1 pound. **Price \$6.50**. Postage extra.

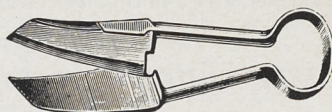
FETLOCK CLIPPERS



An inexpensive instrument for clipping fetlocks and for roaching or trimming.

Each in an individual box. **Price: \$6.95**. Postage extra.

HORSE AND MULE SHEARS



Forged and tempered. Curved blades. Full ground and polished. 10 $\frac{1}{2}$ inches long.

Price: \$2.10 each. Postage extra.

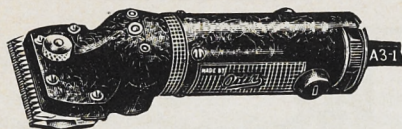
CURVED BLADE ROACHING SHEARS



Japanned handles. Heavy steel blades curved just right to properly trim tails and rumps or roach a mane. One blade serrated. 7 $\frac{1}{2}$ -inch length. **Price: \$3.85**. Postage extra.

6 $\frac{1}{2}$ " Smooth, **\$2.50** Postage extra.

OSTER ANIMAL CLIPPER



Model A-4 Heavy Duty for general use in clipping livestock. The Oster Animal Clipper embodies all the top-quality features found in the finest electric hair clippers on the market today. Smooth, quiet operation makes clipping easier and safer. Special cooling feature makes longer continued use possible. Complete with 20 feet of heavy duty rubber-covered lead cord. Shipping weight, 6 pounds.

Price: 110-volt, AC or DC, **\$55.00.**
Postage extra.

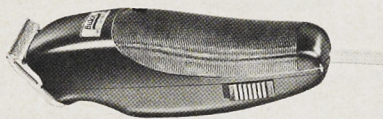
Model A-2 Small Animal Clipper. The equal of the Heavy Duty Oster Clipper listed above, in smooth, quiet operation. Widely used for grooming horses and cattle; dogs, goats, and other small animals.

Price: 110-120 volt, AC-DC, **\$42.50.**
Postage extra.

Equipped with No. 10 blades for general purpose use. Extra blades available as follows: No. 15, Close Clipping; No. 40, Surgical Clipping; No. 5, for plucking; No. 7, for matted hair. **Prices on request.**

Extra heads also available. Prices on request.

OSTER "BUTCH" CLIPPER

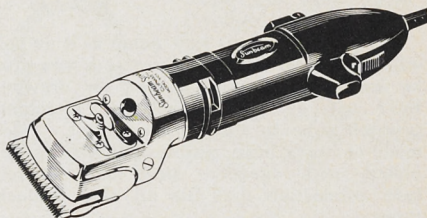


A light-weight clipper which is ideal for trimming ears and other trimming about the head. Can also be used for lighter trimming around the ankles. Insulated, air-cooled universal motor, 110-120 volt, delivers 30,000 cutting actions per minute. Quiet and smooth in operation. Weighs only 1¾ pounds. **Price: \$21.95**, postage extra.

Repair parts for clippers are carried in stock at manufacturer's standard price schedule.

Sunbeam

STEWART CLIPMASTER AND SHEARMASTER



Completely new clipping and shearing instruments for greater efficiency than ever before. Up to 3 times more powerful and 50% faster. Cutter speed now 2,500 to 3,000 cycles per minute. New models weigh the same as the old, with improved balance. The motor is cooler-running and equipped with double insulated 2-wire cord.

No. 510 Clipmaster, 110-120 Volts AC-DC, **\$54.95.**

No. EW310 Shearmaster, with same motor as described above, with 2½-inch, 10-tooth PC10 Comb and 3-point PC3 Cutter, **\$66.50.**

No. 510A Clipping Head only, complete with blades, **\$27.75.**

No. EW310A Shearing Head only, complete with comb and cutter, **\$38.75.**

Clipping and Shearing Blades for above.

No. 83AU Upper Blade, **\$2.95;** **No. 84AU Lower Blade**, **\$3.35.** For use with models 510, 510A, 51, 52 and 53 Clipmasters.

No. PC3 Cutter, **\$1.50;** **No. PC10 Comb**, **\$3.50.** For use with EW310 Shearmaster and EW310A Shearing Head.

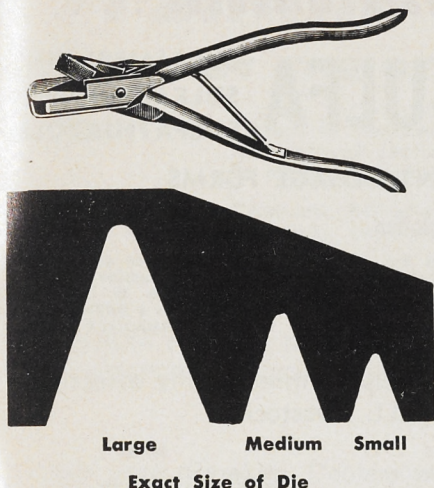
No. 4HA Cutter, **\$1.25;** **No. 4HB Comb**, **\$2.95.** For use with models 31, 32 and 33 Shearmasters.

All prices on parts and attachments, postage extra.

In addition to the above listed items, we are able to supply hand-powered and motor driven clipping and shearing equipment for shipment direct from the factory.

Contact your Franklin dealer or write this office, giving details of your requirements. Prices and availability will be forwarded to you immediately.

EAR NOTCHING PUNCH



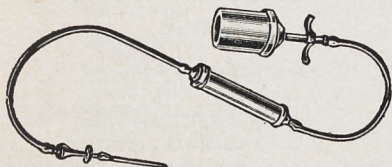
For removing a V-shaped notch from the outer edge of the ears of animals.

Scissors-like action of this instrument cuts cleanly to provide quick, efficient ear marking with minimum effort.

Available in three sizes. The size of the notch which may be cut with each can be varied by using the tip of the die at the desired depth, up to the maximum for each size instrument as illustrated at left.

Price: Large, \$7.50; Medium, \$6.00; Small, \$3.50. Postage extra.

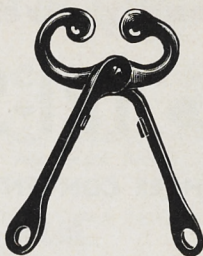
MILK FEVER OUTFITS



Long lasting metal pump with soft rubber tube and milking tube. Outfit complete in cardboard carton.

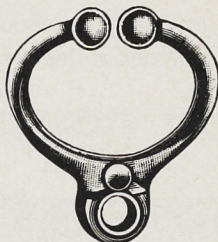
Price: \$5.60. Postage extra.

FRANKLIN LEADER



Strong, sturdy malleable iron lead. Length, 8". Indispensable for restraining cattle while administering boluses or other medicinals, tattooing, ear tagging, treating pinkeye, etc. Eye in handles permits use of rope to secure the lead and aid in restraint. **Price:** \$2.25. Postage extra.

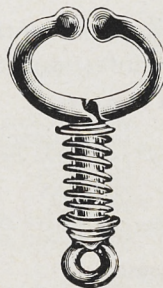
AUTOMATIC LOCK CATTLE LEADER



The dressy appearance of this bright bronze leader lends smoothness to animals in the show ring. Automatic locking feature facilitates application or removal. Designed for show use only—not for heavy utility use. Loop in end is especially designed for use with 1/2-inch leather lead.

Bronze Automatic Lock Cattle Leader, \$3.50. Postage extra. Same style in aluminum, \$1.75. Postage extra.

"KANTSLIP" CATTLE LEADS



Made with fine quality holding spring. Snaps into nose and holds firmly. Does not pierce the nose. Easy and quick to insert and remove. Not to be confused with the breakable cast-iron leads. 2 1/2-inch size, \$1.25. Postage extra.

LEATHER LEAD

A 1/2-inch by 4 1/2-foot leather lead of fine strong tan skirt leather with loop. Suitable for use with bull ring, Automatic Lock Lead, or Kantslip Lead.

Price: \$2.25 each. Postage extra.

Two Highly Effective Weapons for Fighting Many Deadly Livestock Diseases . . .



FRANKLIN

TRI-SULFA

**SULFAMERAZINE
SULFAPYRIDINE
SULFATHIAZOLE**

IN THREE CONVENIENT DOSAGE FORMS

Tri-Sulfa Boluses

For Oral Administration

60 grain boluses for small livestock.

240 grain boluses for large animals.

Tri-Sulfa Solution

A sterile solution for intravenous or intraperitoneal injection. Each 100cc contains 13 grams sulfonamide.

In 250cc and 500cc vials.

Tri-Sulfa NS (Liquid)

Each fluid ounce contains 100 grains sulfonamide, for administration • In DRINKING WATER • As a DRENCH • As an INTRARUMINAL INJECTION.

Provides high, long-lasting blood levels of three highly effective sulfonamides. For ALL Livestock.

CATTLE & CALVES

BACTERIAL SCOURS
BACTERIAL PNEUMONIA
CALF DIPHTHERIA
CALF SCOURS
COCCIDIOSIS
FOOT ROT
MASTITIS (acute)
SHIPPING FEVER

HORSES

BACTERIAL PNEUMONIA
SHIPPING FEVER
STRANGLES
JOINT ILL

SWINE

BACTERIAL SCOURS (Necro)
SHIPPING FEVER
PNEUMONIA

SHEEP

BLUE BAG
BACTERIAL SCOURS
COCCIDIOSIS
SHIPPING FEVER
PNEUMONIA
FOOT ROT

AND bacterial complications in virus diseases in all species.

Refer to Page 26

PENICILLIN DIHYDROSTREPTOMYCIN SOLUTION

Provides broad-spectrum antibiotic action to combat many bacterial infections of livestock, including:

CATTLE & CALVES

SHIPPING FEVER
BACTERIAL PNEUMONIA
CALF DIPHTHERIA
FOOT ROT
PERITONITIS
ABSCESSSES
URINARY TRACT INFECTIONS
ACUTE MASTITIS

WOUND INFECTIONS
NAVEL INFECTIONS
BACTERIAL SCOURS
BLACKLEG
ANTHRAX
TETANUS
RED WATER DISEASE
MALIGNANT EDEMA

HORSES

BACTERIAL SCOURS
NAVEL INFECTIONS
SHIPPING FEVER
BACTERIAL PNEUMONIA

STRANGLES
ABSCESSSES
WOUND INFECTIONS

SWINE

BACTERIAL SCOURS
BLOODY DIARRHEA
BACTERIAL PNEUMONIA
NAVEL INFECTIONS
ERYSIPELAS

SHEEP

BACTERIAL SCOURS
NAVEL INFECTIONS
BACTERIAL PNEUMONIA
WOUND INFECTIONS
BACTERIAL MASTITIS

And bacterial complications of virus infection in all species.

In severe cases of illness, best results in treatment may be obtained by the simultaneous use of both Tri-Sulfa and Penicillin Dihydrostreptomycin Solution.

Refer to Page 39



FRANKLIN

Franklin PRODUCTS

PROTECT THE STOCKMAN'S PROFIT

FRONT COVER: "Angus in Paradise" near Steamboat Springs, Colo. Color transparency, courtesy American Angus Association. Lloyd D. Miller, photographer.

BACK COVER: "Autumn Refreshment." Color transparency by Stanley Zamonski, Lakewood, Colorado.



Franklin Products are available through animal health dealers in practically every livestock trading center.



See your Franklin Dealer; or for general information write nearest Franklin Office shown below.



O. M. FRANKLIN SERUM CO., LTD.

MAIN OFFICE

P.O. BOX 428

526 7th Ave. S. E.

Calgary, Alberta

WAREHOUSE DISTRIBUTION POINTS

**635 Avenue H, South
Saskatoon, Saskatchewan**

**2815 5th Avenue
Regina, Saskatchewan**

**359 Rideout St., North
London, Ontario**

**58 Westbrook Street
Winnipeg, Manitoba**

**13550 97th Street
Edmonton, Alberta**

LOCAL DEALER

Merrill Post Ltd.
St. John St. West
Edmonton, Alberta

